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SUGGESTIONS ON THE PSYCHOLOGY OF SUPERSTITION.*

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It is scarcely necessary to say to this critical and intelligent audience that the task imposed by the title of my address is an extremely difficult one, and that I cannot hope to say anything final on the questions involved. But I trust and believe that all thoughtful students of human nature recognize that superstition and superstitious belief are still powerful factors in human behavior, and that this field has not been given the attention it deserves. I come to you, then, as a student of human nature, not to try to impose any set theories, but to discuss with you candidly and honestly some of the evidence I have collected relating to superstition.

In the first place, I wish to call your attention to the fact that superstition, so far as we know, seems to be an exclusively human manifestation. If the lower animals exhibit in any direct way this mental phenomenon, it has thus far escaped scientific recognition and analysis. True, a few observers have claimed that dogs and other of the lower animals have exhibited signs of superstitious behavior, but in the strict sense of the word little or no incontrovertible evidence has been advanced to sustain their contentions. It is safe, at least, to say that if superstitious belief is an element in the mental life of the lower animals, it exists in a very attenuated form, and has very little influence on their general behavior. For all practical purposes it therefore seems to be unrepresented, in the true sense, in the mental life of the

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lower animals. This point of view at once lifts superstition into a special realm, and, therefore, while it appears partly to disconnect it from mind as a whole, it predicates it as one of the distinguishing marks of human psychic nature. It then becomes our task to look at it as a manifestation and a product of higher mental life.

Having made this point clear, I wish now to acquaint you with the nature of the evidence I have collected touching this quality of the human mind. I have gathered directly from the minds of 875 different students, whose average age was about 19 years, nearly 10,000 specimens of common superstitions. These students were engaged in the task of preparing to teach in the public schools of this country, and were selected for this purpose by reason of general intelligence and worthy moral character. Not only were they intelligent in the ordinary meaning of this term, but they had passed with credit through the elementary schools, and in addition had spent from one to three years in higher scientific study. It is fair to say that the evidence of superstition I have to present cannot be attributed to personal ignorance or to lack of opportunity to come into touch with the methods and products of scientific investigation. Of these 10,000 specimens, I have tabulated and studied 7176. By reason of the method used in obtaining this material, I have been able to classify the specimens with reference to their frequency of occurrence, to the nature of the phenomena interpreted, and to the degree of credence with which they were held. In order to make the treatment of the material clearer, it will be necessary to explain briefly the method used in obtaining it. Imagine, if you will, a group of mature students seated in a class-room in the day time expecting to recite their lessons or listen to a lecture, but, instead of using the period for this purpose, the teacher passed out slips of blank paper and unexpectedly asked each student to write out as many superstitions as possible in the hour, and to indicate with scrupulous honesty his or her belief or disbelief in each specimen written. They were told to mark all those they did not believe in "no belief"; those in which there was a partial belief, "partial belief"; and those in which they had unquestioned belief, they were directed to mark "full belief." A word further about these statements of belief seems necessary. These students were directed

and urged to tell the truth as far as it was possible for them to do so, and to leave their specimens unsigned as a means of preventing any unconscious prevarication. It is perfectly safe, then, to assume that there was no prejudice or fear of the teacher operating to cause them to overestimate their belief, because it is a fundamental trait in human nature to put the best foot foremost, and hence the amount of credence they really felt in the superstition each wrote was probably underestimated rather than exaggerated. No one received any assistance, and no one knew or had any opportunity to know what the others had written until after the returns were gathered. By this means I was enabled to gather the largest list of superstitions ever gotten together, and to do it in such a way as to prevent any suggestion or hearsay. They were all gathered directly from the minds where they had found lodgment, and the belief expressed in them was personal belief.

In order to acquaint you to some degree with the character of these returns, and to give you some specific information regarding them, permit me to read you some specimens which I have selected as types. These will prepare you to estimate the value of the discussions which follow:

	No Belief.	Partial Belief.	Full Belief.	Total.
"If you pick your teeth with a splinter taken from a tree that has been struck with lightning, you will never have the toothache".....	0	0	1	1
"If you cut your hair in the new moon it will grow better, etc."	7	9	14	30
"If you see the new moon over your left shoulder for the first time, you will have bad luck".....	29	24	3	56
"If you see a star falling, it is a sign some one is dying—"	7	7	1	15
"If a bird flies in at your window, there will be a death in the family".....	11	11	5	27
"It is very bad luck to have peacock feathers in the house—"	6	1	6	13
"If a dog howls, it is a sign of death in the family—"	17	14	9	40
"If you break a looking-glass, you will have bad luck for seven years—".....	48	49	16	113
"If you drop the dish rag, you will have company—"	77	39	22	138
"If you will carry a potato in your pocket, it will cure rheumatism"	1	1	1	3

	No Belief.	Partial Belief.	Full Belief.	Total.
"A potato carried in your pocket will <i>keep away</i> rheumatism"	2	..	2	4
"If you carry a rabbit's hind foot in your pocket, you will never have rheumatism"	1	..	..	1
"A horse-chestnut carried in your pocket will cure rheumatism"	1	1	..	2
"If on retiring at night you insert the toe of one shoe in the mouth of the other and then place them under your bed, it will cure rheumatism" ... ..	..	1	..	1
"If you will put a spider in a nutshell and wear it around your neck, it will cure a fever"	5	..	..	5

And so on almost to any extent.

But I cannot take more time to detail to you these specific products of superstitious minds. Doubtless each one of you has come into contact with many different sorts, and all of you have found how persistent and potent they are in the common mind. Suffice it to say, I have here a tabulation of 7176 confessions of belief or disbelief in more than 3000 varieties of superstitions, and that the percentage of belief in them is nearly 45. To be exact, of these 7176 confessions made by honest, intelligent, educated people, 3225 of them express a belief in them. For example, take this specimen which is very commonly known: "If you permit a baby less than a year old to look into a mirror, it will die before it is a year old." Ten out of eleven people who gave me this superstition expressed an abiding belief in the truth of it. Furthermore, these confessions were so expressed that they left no doubt that seeing its own image would be the cause of the death of the baby. This attitude represents a phase of human nature, in this year of the Lord 1910, and it is a more powerful element of mind than most of us have been accustomed to think. But now let us turn to the main task suggested by the topic listed on the program. What are some of the peculiar characteristics of the superstitious mind?

1. Like the critical, scientific mind, the superstitious mind refers events or effects to causes. These causes, too, in each case precede their effects. So far, then, it is fair to say that superstitious conclusions represent the beginnings of an attempt to explain the world of experience by assigning phenomena to definite causes. Science attempts to do the same thing. In each case the event or phenomenon to be explained must find its value in the mind

which has taken it over for consideration. And just here we have to make our first fundamental distinction between the behavior of a critical, scientific mind and one satisfied with such interpretations as were detailed to you a few moments ago:

Superstitious belief is shot through with a fear which grows out of a naive acceptance of an animistic conception of the universe, in which even sticks and stones understand to a degree the behavior of men, and reward or punish them or prophesy for or against them. The fear that somehow the universe or some part of it is purposely antagonistic or favorable to man begets in the unscientific consciousness an almost uncontrollable solicitation to a belief despite all reason to the contrary. In the superstitious mind, a feeling to believe therefore often takes precedence over a belief that is suggested or dictated by reason. The unwillingness of many people to sit at table with 13, to live in a house designated by this number, or to occupy a state-room so numbered on board ship, cannot be accounted for on any other basis than that some vague fear compels it. There is no reason in such behavior; but the superstitious feeling is so strong that it would be foolish from a business point of view for the builders of a ship to allow this number to figure in any part of it. So it happens that in the construction of many of our great ocean liners, those wonderful products of man's scientific and inventive genius, that this number is avoided with painstaking and scrupulous care. This fear of the supposed dire influence of the number 13 has persisted at least more than 5000 years, for we have definite information that the people of ancient Babylon believed in the 13 superstition and regulated their behavior to some extent accordingly. Five thousand years of opportunity to learn that it is unreasonable, and of necessity a false conclusion, has not operated to relieve many intelligent people of this fear.

Such a fear, as I have said, is based on a sort of unconscious belief that the whole machinery of the universe is in the hands of the gods, and that they, for unknown reasons and according to their own pleasure, can bring upon man good or bad luck, great joy or tribulations. This fear varies in intensity with mental and physical conditions. It is likely to be much stronger when the body is tired, or sick, or when the mind is ill at ease and worried about something. It is usually stronger at night than in

the daytime, and greatly exaggerated by long-continued separation from all social intercourse, such as the sheep-herders experience when they follow their flocks into uninhabited regions. Whatever intensifies this fear or permits it to hold precedence over the reason, or the power to see things as they are, makes for superstitious interpretations. Under *any* condition, belief is either a matter of mere passive acceptance, or a feeling of logical compulsion brought on by reason of the relations among the facts present in consciousness. If *fear* is there, logic counts for little. If fear dictates belief, it is almost hopeless to expect any reasonable show of facts to establish its falsity. But whence comes this fear and faith, this satisfaction in superstitious conclusions? It is, I believe, a psychic predisposition which cannot be understood, save as we consider it in its genetic aspect. It is a mental remnant. You call the appendix a biological remnant, and often wish it were absent from the body, for it is doubtless the source of more danger than help to us now. In much the same way we must think of this element of superstitious fear in the mind. It is probable that it had its origin in conditions long since passed away. It is a belated expression of human progress and harks back to that stage in development when the conscious life was just beginning the quest for a knowledge of cause and effect. Unfortunately, the psychologist or teacher cannot get at it and eradicate it as you can the appendix. It is not a function of any particular convolution of the brain, it is a product of the emotional life and imposes itself on the intelligence in spite of science and even critical personal knowledge. This fear, as I have suggested, varies in intensity with the changing emotional tones. Sick people readily believe in patent medicine advertisements which they would neglect or disbelieve when in good health. People in trouble readily patronize the most audacious frauds of our modern life, the so-called clairvoyants and fortune tellers. Even the coming of the night will so change the emotional balance of most people that superstitious faith and practice is markedly increased during the night. No one ever heard of a daytime ghost. Haunted houses are not haunted in the daytime, simply because the vague and torturing fear of the nighttime gives place in the daytime to a more rational view of things. It often happens, therefore, that just when rational action and judicious behavior is

more needed, many people give way to the dictates of elemental fears and trust to luck, to fortune tellers, or to quack doctors, who, by means of the low ethical standards of many of our newspapers, are allowed to prey upon the people by arousing their fears and appealing to their superstitious weaknesses. (Reads advertisements.)

Medical science has progressed at a truly wonderful rate during the past half-century. For the closer application of scientific method to the study of the causes and cure of diseases has not only given definite guidance in the treatment of certain ailments, but has likewise set the medical world to thinking in new directions. It may seem strange, to some, in view of these facts, that during the same time, and more especially in the last decades of this period, superstitious "healing" has become conspicuously common. The word superstitious is used in this connection advisedly. In the light of the most elemental notions of surgery and of superstition one cannot on any other basis classify the following case, which is only a fair and true sample of thousands which might be readily collected. "Frank Knowles Butterworth, the master printer of Manchester, who refused to call in a doctor when his ten-year-old daughter broke her collar-bone, was yesterday sentenced to a month's imprisonment for causing her unnecessary suffering. He is a follower of Dr. Dowie, to whom he cabled for prayers for the girl's recovery, and told the court he held to the doctrine that all cures are effected by faith and prayer."

Were it not irrelevant to our present purpose it would be satisfying to commend to the attention of all American justices this action of the magistrates of Manchester.

It was said above that in these modern days superstitious treatment of disease has become conspicuously common. Perhaps it has always been so; still there seems now to be a growing boldness about such practices hitherto unnoticeable. There are no available statistics to prove this last statement, and therefore it must stand as mere opinion; but it is quite probable that all who have read widely and observed closely on this subject will agree with it even if it cannot be thus demonstrated. Moreover, if we turn to our list of superstitions we find indirect evidence is forthcoming that the folk mind is, on the whole, more rational, and

that no such utter folly as absent treatment for broken bones is represented. A statistical study of the superstitions reported brings to light the fact that of the 111 different kinds having to do with the cause, cure and prevention of diseases, more than half of these relate to the removal of warts. If we include in one class all those relating to very minor difficulties, such as warts, sty on the eye and nose-bleed, and combine all others into a second class, we find nearly 64 per cent of all the cases reported belong to the first class. This suggests that perhaps with the folk less reliance is placed on superstitious treatment in cases of serious afflictions than in cases of milder and insignificant troubles. One could believe that this tendency is equally marked among those who practice modern "healing," were it not for the fact that the published statement of their doctrine and the criminal boldness, which they often show in its application, seem to disprove it.

Another somewhat related question which we might put to our statistics is this: Do superstitions refer most frequently to prevention, cause or to cure of diseases? This can be answered by saying they refer to all, but chiefly to cures. Out of a total of 151 specimens returned—and this is an unexpectedly small number—107 refer to cures, 19 to causes and 25 to prevention of diseases. Nothing need be said of these figures save to point out the fact that they illustrate the general and necessary behavior of the folk mind and conform to the laws of human progress as we know them. An ounce of the power to think in terms of prevention is harder to develop than a pound of ability to consider a situation after it has arisen.

If we ask the question as to whether the remedies here suggested have any real efficiency, we can answer only by saying if they do, it must come through suggestion. For, with the exception of two or three cases, there seems not to be a single specimen in which there is any immediate or sufficient relation of the remedy to the disease to effect a cure. If warts can be removed by counting them, then it seems certain that the removal is brought about through the effect of mind on the body. If a fever can be broken up by inclosing a spider in a nutshell and hanging it about the neck, the cure must come as the result of faith or to natural recovery rather than as a direct result of the thera-

peutic power of the spider. If rheumatic aches can be eradicated by carrying a potato, a nutmeg or a horse-chestnut in the pocket, ordinary common sense refuses to attribute the cure to any direct influence of these objects on the amount of uric acid in the blood. If there be any relief, it must be indirect and mental.

All who study the examples of superstitions referring to diseases will notice that they are stated as if the real power to cure existed in the charm, or the chestnut, the bone, or the black cat's tail. This gives them an objective power that, as it seems to me, the latter-day "faith curists" are missing. For my part, it would be much more conducive to faith in an effectual cure of rheumatism if with this result in mind on retiring at night I inserted the toe of one shoe into the mouth of the other one, and then placed them under the bed, than it would be if, when racked by the pain of this distressing disease, I struggled to convince myself that after all no such disease existed, and that there is no such thing as rheumatic twinges.

Then there is another advantage growing out of this objective method used by the folk that should not be overlooked. They can apply it more readily when their domestic animals are ailing. For example, if there be any merit in such things, it would certainly be much easier to adapt some objective superstitious remedy to a case of colic than it would be to undertake to persuade a groaning horse that he is entirely mistaken concerning his condition, and that after all there is no such thing as a vigorous abdominal ache. Horse sense would likely be too blunt to appreciate the force of this argument.

The "faith cure" doctrines rampant in America and elsewhere have issued in such multifarious and religious forms in recent years that they defy any systematic classification. And they have thus reinforced superstition by incorporating some elements of it into a religion. That they appeal very largely to a lively and potent superstitious impulse is attested by both doctrines and devotees. It is not my purpose to deny their feelings or beliefs, but simply to assert that they have in no careful and scientific way demonstrated the truth of their claims. People who are willing to believe in the inspiration of a book which "reads as well backwards as forwards," and in either direction appeals chiefly to emotional women and credulous men, are *ipso facto* devoid of that just balance in life which subordinates fancy to

fact. They rarely feel the need of demonstration, and when they do, they are usually incapable of accepting it ungrudgingly, or of even knowing when it has been given. But in making this comparison, it would be as unscientific to condemn their doctrines and claims as wholly false as it would be to accept them *in toto*. There is plainly an element of truth in "mental healing" which must be recognized by all who know anything of the influence of mind over body. How far this can go in the cause and cure of certain classes of ailments we do not know. It would be an easy matter to collect a vast amount of honestly given evidence going to establish the most extraordinary cures wrought in this way; but most of this evidence, if not all of it, would break down completely or be found insufficient when subjected to rigid scientific method. This statement is not the expression of mere opinion; it is based on the results of experience and investigation. No greater boon could come to the human race than a safe and inexpensive (?) way of curing diseases by "absent treatment"; but nothing worse can befall it than a return to the days when desire determined belief and fanaticism fastened it.

Doubtless much greater use is made of superstitious remedies among the folk than ordinarily comes to light. One needs only to live among them for a short time to realize that belief in all sorts of charms for diseases have still a very strong hold on their minds.

Let me close the discussion of the first point with this practical suggestion: Whatever will tend to arouse or increase in the human mind this elemental fear, this fear of the dark, this animism will operate to increase people's belief in superstitious healing, in charms, and in cures by absent treatment. If you dignify this fear by incorporating it into a religious cult, you will thereby strengthen it and fasten it all the more firmly.

But this animistic faith and belief operates in many other fields besides that of health and disease. The belief in luck is a powerful factor in modern life. There are thousands of intelligent people who would not think of beginning a serious piece of work on a Friday, even if all the other conditions seemed most propitious, and common reason urged it. They can give no reason for such irrational conduct, and when urged to explain the reasons for their conduct, they merely say they are afraid to do so for they feel as if something would surely happen to prevent its successful

completion. They may even say they do not believe in luck, but they prefer to take no chances. Many engineers and gamblers feel safer with a rabbit's foot in their pockets. During a visit to Monte Carlo a few years ago, I saw men and women bet on a number that had been in some strange way suggested to them, and this despite the fact that a moment's calculation would show them that they were betting on a certain probability against them. The roulette wheel and the table corresponding is plainly marked to show this. A good story was told me of how far this neglect of fact will go, and how eagerly they seek some occult or divine power to help them win. It chanced one Sunday that a gambler found his way to the English church in the town, and upon hearing the number of the hymn announced, was, as he expressed it, impressed with the *feeling* that this was a lucky number to bet on. He immediately left the church for the gambling table. He staked heavily on this number and won. Following up the suggestion, he went to church *next* Sunday, and after remaining long enough to hear the number of the hymn, bet on it again and chanced to win the second time. He told the secret of his success to some of his friends, and they, too, took to going to church. The contagion spread, but the remarkable exodus after the hymn had been announced led the rector to suspicion that something was wrong. After a little investigation, he located the trouble and took occasion to announce from his pulpit that no more hymns would be sung save those whose number was above 37, the highest number on the roulette table. I took occasion to make some inquiry concerning the truth of this story, and was told by many honest and intelligent people that there was no doubt about the truth of it. I saw women repeating rhymes to the images of little pigs and then betting on the number suggested thereby, and fully expecting this image and the rhyme to exert an influence in their favor on the wheel.

When one stops and candidly inquires into such behavior as this, he cannot help seeing that back of it and underneath it there is a strong feeling of belief that luck is something tremendously real, and that it is possible to get guidance from a rabbit's foot or the behavior of a tired fly. It is evident, too, that this guidance is expected in the way of some emotional control brought about through the power of these things, so that the individual who is about to bet will be impelled to select a certain number or combi-

nation of chances because he *feels* strongly that this is to be a winner. Psychologically, this is a most interesting situation. It is a tacit belief in a universal consciousness in which there exist no time distinctions between present and future, and that those who will may share in such a mental state.

When we see a small boy "christening" his taw in order to insure good luck at marbles, we laugh over it and pass it by as child's play. But when we see those who have grown old enough to put away childish things, earnestly and seriously trusting to the carved image of a pig to suggest a winning play at roulette, our cheeks pale, and our dreams of the divinity and rationality of man are rudely disturbed. The added eagerness and concentration which christening the taw may bring render the boy's behavior highly intellectual as compared with that of the adult who has absolutely nothing to do with the outcome of the so-called game of roulette. Truly, "man is fearfully and wonderfully made," or at least he is at the present time strangely conditioned in the process of making.

The second main point which I wish to emphasize in this analysis is this:

Superstitions represent in part those conclusions which men have adopted in order to free the mind from the strain of incomplete thinking. Men are naturally driven to conclusions regarding the meaning and significance of those phenomena which appear in their minds. There can be no physiological or psychological equilibrium unless the mind comes to rest in a conclusion. It is both physically and mentally very trying to hold in the mind a series of conditions and at the same time prevent them from shooting together into some sort of dénouement. The untrained and instinctive mind reaches conclusions quickly, for this temporarily is the line of least resistance. Thus it may reach quasi generalizations for itself, or, what is more usually the case, it may accept the generalizations passed down to it by tradition, for it is easier to accept an explanation authoritatively given than to frame one.

All this is illustrated clearly in the mental development of a child. Its reactions come immediately on the presentation of mental stimuli and with the least waste of nervous energy. The child cannot and will not hold in abeyance for any length of time the mental presentations it receives, for to do so would demand a mental preparation it does not possess and a power it cannot

exert. It must either rest in its own child-like conclusions, or, what is more often the case, it begs for relief by putting almost innumerable questions to its elders. Every one will recall the definite pleasure a child experiences when his questions are answered. Almost any answer will do, because it sets the mind at rest. At a later stage of development when the analytical powers are developing and each phenomenon begins to resolve itself into a multiplicity of conditions, the answers are not satisfying unless they are more explicit and reasonable. But it will be observed that with the folk, as with children, when a definition has once been accepted from an authoritative source, it may be retained long after the power has developed to see its limitations. This is why most of our reconstruction must come through corrective thinking and action. When we see that a definition or a generalization will not suffice when put to a practical test, and when we can repress our instinctive feelings to believe in it regardless of reason, then we are ready for a new one. All this mass of superstitious belief has been handed down from generation to generation and clearly shows the desire of the mind to relieve itself by means of conclusions already made. No individual can command sufficient energy to go it alone, even if he had such a desire. Truth is evasive and can only be reached by the masses through piecemeal corrections of an earlier faith.

There is infinite rest in believing in something, even if that something will at some future day prove insufficient. There is even great relief in the belief that one is traveling the right path, though the end be not in sight. A theory considered in this sense is an hygienic necessity, for it satisfies the inherent demand for temporary conclusions and brings a mental equilibrium essential to united personality. The greatest agnostics soon seek rest in dogmatism, for they commonly insist beyond the peradventure of a doubt that their position is the only one any rational being can hold, and they alone have been consistent in argument and observation. They try to shield themselves from this criticism, however, by accepting the dictum that all truth is dogmatic. The fact is, the human organism is so constructed that it must "serve God or Mammon." It is impossible for it to function and maintain its integrity intact, when the mind rests in no conclusions, and therefore wills to do nothing. Disintegration is the only possible outcome to consistent agnosticism. It is only the overwrought

and unhealthy mind that will not or cannot come to conclusions. "Sicklied over with the pale cast of thought" is a striking characterization of one who is afraid to come to a decision, fearful lest the conclusion reached will not represent completely and exhaustively all of the conditions. Such a mental stage begets a nervous tension which rapidly uses up the vital energy, and in the end comes to nothing but distress. A complete and healthy mental life must develop through piecemeal thinking and corrective doing.

The educational implication of this is very important and all inclusive. When the generalizations of the adult are given as rules to govern the young, there is of necessity a lack of understanding, which can be corrected only by a more or less shortened attempt to work it out through experimentation, or (to use a better term in this connection) through corrective action. The laboratory, the shop, and all other practicable opportunities for application, and even life as a whole, are pedagogical necessities of prime importance in order to afford those necessary requirements which sound and natural learning demands.

Belief in superstition is closely associated with narrow experience, unscientific observation, the undue persistence of early conclusions, and the natural tendency of the mental life to reduce experience to rules or generalizations for guidance in practical life.

There is some special significance in all this for our people. The hurry and rush of modern life, and hence the increased emotional tensions which must accompany it, operate to throw more people back on *feeling* for guidance than was the case during the time when their environment was not so stimulating. American life puts a premium upon hurried action, and as emotion is one of the by-products of these tensions, as well as one of its chief instigators, it is easy to see why, those who look on from without, call us queer and hysterical.

And now, if these considerations concerning this elemental predisposition have seemed a bit harsh or disturbing, or if talking in this frank fashion about them has in any way worried you, follow this advice, for I have been assured of its efficacy:

Before retiring to-night, place your shoes side by side upon the floor, *at the foot* of the bed, with the toes pointing away from it, and you will sleep soundly and peacefully, and you will not be disturbed even by a guilty conscience.

METHODS OF DEALING WITH THE CRIMINAL INSANE—DEFECTS IN PRESENT METHODS AND SUGGESTED REMEDIES.*

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The distinctly criminal insane, notably paranoiacs, if at large and not under restraint, are admitted to be dangerous to the public peace and safety. In the State of New York, this class of offenders, when dealt with according to the provisions of the Code of Criminal Procedure, is under restraint in the custody of the Matteawan State Hospital, an institution devoted exclusively to this purpose. The jubilee of the hospital was celebrated in 1909; and the report shows that during the 50 years of its existence it has received in all 3160 patients. Of this number, 313 had been indicted for homicide. In addition, 598 patients had been indicted for burglary, a certain number of these, for burglary with assault. Thus, more than 50 per cent of the total number committed or transferred to Matteawan were more or less dangerous to the public peace and safety.

Of the 313 homicidal insane received at Matteawan, 121 were convicts and 192 are classed in the report as "unconvicted." Nearly all those classed as "convicts" were women; which is explained by a provision in the statutes, that women are to be received irrespective of length of sentence. No male convicts are received except those "undergoing a sentence of one year or less or convicted of a misdemeanor." (The Insanity Law, §118.) The problem of dealing with these dangerous and irresponsible offenders is indeed formidable; but their care is an unavoidable public burden, which involves a large expenditure of money. As regards Matteawan, it is a conservative estimate that the cost of site and construction was at least \$2,000,000. The cost of maintenance for the year 1908-1909 was \$155,000. The State of New

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York, therefore, pays yearly about \$250,000 for protection of the people against crimes by the insane.

The average population of the Matteawan State Hospital for 1908-1909 was a fraction more than 755. The normal capacity of the hospital is 550. The institution, therefore, is now seriously overcrowded; and this condition has existed for several years. Overcrowding, unfortunately, exists in nearly all public institutions; and it is seldom, indeed, that provisions for public dependants keep pace with the requirements.

The congested condition of Matteawan, which is unsafe and demoralizing, is in a measure remediable. While a reduction in the number of convicts seems impracticable, the class of "unconvicted"—from 25 to 50 per cent of the total population—includes many who might properly be returned to the courts for trial.

The conditions at Dannemora are quite different from those at Matteawan, although both institutions are under the control, as regards general administration, of the Superintendent of Prisons. The Dannemora State Hospital is "used for the purpose of confining and caring for such male prisoners as are declared insane while confined in a State prison or reformatory, or while serving a sentence of more than one year in a penitentiary. (The Insanity Law, §140.) The Matteawan State Hospital is "used for the purpose of holding in custody and caring for such insane persons as may be committed to the said institution by courts of criminal jurisdiction, or transferred thereto by the State Commission in Lunacy, and for such convicted persons as may be declared insane while undergoing sentence of one year or less or for a misdemeanor at any of the various penal institutions of the State, and for all female convicts becoming insane while undergoing sentence." (The Insanity Law, §110.)

The requirements of the Dannemora State Hospital are simple. This institution is for the custody and care of insane convicts. Such inmates are retained only for so long as they are insane. Those who recover are returned to prison to serve out their terms. Those remaining in hospital after expiration of sentence are retained for so long as they are insane or they may be transferred, by order of the State Commission in Lunacy, to any of the so-called civil hospitals.

The inmates of the Matteawan State Hospital, with few and negligible exceptions, may be divided into convicts and unconvicted. Of the 3160 received since 1859, 809 are recorded as "unconvicted," a little more than 25 per cent; 2326 are recorded as convicts, and 25 as "cases showing criminal tendencies, transferred from other State hospitals, order State Commission in Lunacy." Of those admitted during the year ending September 30, 1909, 45 are classed as "unconvicted," with 46, as under sentence, about 50 per cent of a total of 91 of the two classes.

The "unconvicted" are persons committed by the courts, as in such a mental condition as to be incapable of understanding the proceeding (trial) or making their defense.

It is provided that this class of inmates, when restored to reason, shall be returned to the courts for trial. That this should be done, and done without undue delay, is just, both to the public and the inmate; and it is here that a reform in procedure is demanded.

Patients received in a hospital for the insane under ordinary commitment are held under an order by a court of record, based on an examination and certificate of two qualified examiners in lunacy. This certificate gives a fairly complete medical history of the case. It is said by superintendents of hospitals for the criminal insane that they receive patients from the courts, either without histories or with histories so imperfect as to render diagnosis and prognosis difficult. This often leads to undue detention of patients, an injustice to the patient and the public alike.

In my opinion, it should be provided by statute, that when an alleged lunatic is committed by the court, a complete medical record of the case should accompany the order, the same to be incorporated in the case book. In the Insanity Law of the State of New York it is provided that, in cases of habeas corpus, . . . "the medical history of the patient, as it appears in the case book, shall be given in evidence, . . ." (The Insanity Law, §93.)

It is peculiarly important that full records should be on file at hospitals for criminal insane in cases of those indicated as "unconvicted." This class includes a few cases of persons acquitted on the ground of insanity but committed to an institution as dangerous to public safety. It seems to me that a new section should be incorporated in the Insanity Law, which would provide for a

complete medical record of each and every person sent to the institution as incapable, by reason of insanity, of making his defense in court, or acquitted on the ground of insanity and dangerous to public peace or safety, such record to accompany the order of commitment. This new section should also provide for reports to the courts, at stated periods, by the superintendent, as to the existing mental condition of such patients. Insane convicts are transferred to Matteawan from penal institutions (state prisons for women, county penitentiaries or workhouses, etc., under the provisions of §118 of the Insanity Law). These transfers are made under an order by a judge of a court of record on an examination and certificate by two legally qualified examiners in lunacy. This certificate is a sufficient history of the case; and the Insanity Law already provides for the disposal of such persons, either by discharge or by return to prison in the event of recovery.

The proposed new section to be incorporated in the Insanity Law might read as follows:

§121a. *When a person indicted for crime, but adjudged to be incapable of understanding the proceeding of a trial or making his defense, or when a person has been acquitted on the ground of insanity, but it is deemed by the court that his immediate discharge would be dangerous to public peace or safety, is committed to a state hospital, the court shall direct that the medical record of such person or persons shall be sent to the said hospital, the same to be incorporated in and become a part of the case book. In such cases, the order shall state that such person or persons are committed to the said hospital for observation and report; and the superintendent of the said hospital shall make reports to the court, within six months dating from the time of commitment, as to the mental condition of such person or persons, and shall continue to make such reports at intervals not longer than six months.*

Within one year after the passage of this act, the superintendent of the state hospital for the criminal insane shall report, for each and every patient in his custody and care, to the committing court, the mental condition of such patients, including diagnosis and prognosis, and especially whether the mental diseases from which they are suffering are recoverable or not recoverable.

After the first reports, if there shall have been no material change in the mental condition of a patient or patients, a statement of such fact shall be deemed a sufficient report.

Such reports as suggested above, made at stated intervals, would certainly contribute to relieve the congestion of state hos-

pitals for the criminal insane, especially in the class of unconvicted. The criminal calenders, at least in the county of New York, are always overburdened; and many under indictment are deprived thereby of their right to speedy trial. Under these conditions, persons under indictment sent to a state hospital as insane practically disappear and are forgotten. If desirous of trial, such persons have a remedy only in writs of habeas corpus. The published statistics of Matteawan, unfortunately for my purposes, do not show the present number of inmates in the so-called unconvicted class; but if it be assumed that this is about 33 per cent of the total population, there would be 250 inmates whose cases should be reported to the courts. It is probable that a considerable proportion of these could be certified as not proper subjects for further retention in hospital.

§1120. *Penal Law*.—An act done by a person who is an idiot, imbecile, lunatic or insane, is not a crime. A person cannot be tried, sentenced to any punishment or punished for a crime when he is in a state of idiocy, imbecility, lunacy or insanity so as to be incapable of understanding the proceeding or making his defense.

A person is not excused from criminal liability as an idiot, imbecile, lunatic or insane person, except upon proof that, at the time of the alleged criminal act, he was laboring under such a defect of reason as either,

1. Not to know the nature and quality of the act he was doing; or
2. Not to know that the act was wrong.

It would appear, from this section of the Penal Law, that the first question to be inquired into and determined, in the case of a person indicted for crime, in which it is alleged that he was, at the time of committing the act, laboring under such a defect of reason as "not to know the nature and quality of the act he was doing; or not to know that the act was wrong," should be whether the alleged insanity at the time of committing the criminal act was continued and rendered him "incapable of understanding the proceeding or making his defense"; in which case he could not, under the statute, be tried, sentenced or punished. In cases of acquittal on the ground of insanity, it is evident that the rights of the defendant would not have been affected by a failure to inquire into his mental condition at the time of trial.

In cases in which a plea of insanity is entered according to the

provisions of Section 336 of the Code of Criminal Procedure, it seems logical that the court should at once proceed to inquire into and determine the existing mental condition of the defendant and whether he is capable of understanding the proceeding and making his defense. Statutes already exist which provide for such action; but a slight change, which makes such action, before or during the trial, mandatory would often forestall long and expensive trials, by determining, at the same time, the mental condition of the defendant at the time he committed the criminal act. As the statute now reads, the matter is within the discretion of the trial court.

§658. *Code of Criminal Procedure.*—When a defendant pleads insanity, as prescribed in §336, the court in which the indictment is pending, instead of proceeding with trial of the indictment [*must inquire into and determine the mental condition of the defendant or*] may appoint a commission of not more than three disinterested persons to examine him and report to the court as to his sanity at the time of commission of the crime. . . .

§454 of the code provides that:

When the defense is insanity of the defendant the jury must be instructed, if they acquit him on that ground, to state the fact with their verdict. The court must, thereupon, if the defendant be in custody, and they deem his discharge dangerous to the public peace or safety, order him to be committed to the state lunatic asylum, until he becomes sane.

To return to §658, the second paragraph provides that:

. . . . If a defendant in confinement, under indictment, appears to be, at any time before or after conviction, insane, the court in which the indictment is pending, unless the defendant is under sentence of death, may appoint a like commission to examine him and report to the court as to his sanity at the time of the examination. . . .

The next section of the code provides for the disposition of the defendant if found insane during the progress of the trial:

§659. If the commission find the defendant insane, the trial of judgment must be suspended until he becomes sane; and the court, if it deem his discharge dangerous to the public peace or safety, must order that he be, in the meantime, committed by the sheriff to a state lunatic asylum; and that upon his becoming sane, he be re-delivered by the superintendent of the asylum to the sheriff.

An examination of the sections just quoted from the code shows that the provisions of §454 and §659 are mandatory; but in

§658, an investigation, by commission or otherwise, is discretionary with the court.

"This section invests the trial court with a discretion to order such examination or not as it might, from inspection, observation, and information, judge to be necessary or expedient." *People vs. McIlvaine*, 125 N. Y., 609, 8 N. Y. Cr. 159.

If it should be made mandatory in §658, by the introduction, as suggested, of the words *must inquire into and determine the mental condition of the defendant or*, this would render less frequent, frivolous pleas of not guilty by reason of insanity; for a plea of not guilty, qualified only by the specification of insanity, is an indirect admission of the crime. Indeed, in most cases of this kind, the corpus delicti is practically admitted.

MISUSE OF THE WRIT OF HABEAS CORPUS.

It is boldness approaching temerity for a layman to venture upon a discussion of the sacred writ of habeas corpus. Nevertheless, it is only too evident that the writ is sometimes grossly misused, especially by the reasoning insane in confinement. A recent flagrant example of this is the case of the *People against Thaw*, who is now an inmate at the Matteawan State Hospital as a dangerous person. The defendant was acquitted, on a second trial, of murder in the first degree and was committed to Matteawan on February 1, 1908. In May, 1908, he obtained a writ of habeas corpus returnable before Justice Morschauser. *People ex rel. Peabody (Thaw) vs. Baker*, 59 Misc. 359, May, 1908. After a long and costly trial, the writ was dismissed, and the relator was remanded to Matteawan as still insane and dangerous to public peace and safety. On a second writ, in July, 1909, returnable before Justice Mills, a longer and more costly trial was had, and the relator was again remanded as still insane and dangerous and probably incurable. *People ex rel. Thaw vs. Lamb*, 118 N. Y. Supp. 389, August, 1909. Various other proceedings, instituted with the object of releasing the defendant, have contributed to render this case peculiarly scandalous.

The writ of habeas corpus is for the purpose of determining whether or not the relator is deprived of his liberty "without due process of law." In the case of *Thaw*, this question was settled

definitively in accordance with an overwhelming array of precedent. The defendant was committed as a dangerous person, as a plain duty devolving upon the trial judge under the statute, but only until he should become sane. It was "not a sentence of the court. . . . The commitment to the asylum is only part of the duty cast upon the court" (Clearfield Co. *vs.* Cameron Township, 135 Pa. St., at top of p. 93); and the commitment was essentially temporary. Indeed, public safety requires immediate commitment of dangerous lunatics without notice. "It is not open to contest that such temporary commitments of a summary character may be made *ex parte* and in the exercise of the general police power of the State to arrest and temporarily confine dangerous persons. They are due process of law." Patterson, J. People *ex rel.* Ordway *vs.* St. Saviour's Sanitarium, 34 App. Div. 363, 370. The consensus of scientific opinion is that paranoia, from which the relator (Thaw) is suffering, is incurable; and the universal opinion of alienists is expressed in the general statement that the persecuted paranoiac is the most dangerous of the insane. It has been held in law "that the presumption of insanity, once found, continues; that the fact that the defendant killed a man is conclusive that he is 'manifestly dangerous,' in the absence of clear evidence that his mental condition has undergone a radical change." State *ex rel.* Thompson *vs.* Snell, 46 Wash. 327.

I have cited the Thaw case as a striking example of misuse of the writ of habeas corpus, in which it became necessary to have two reinvestigations into the mental condition of the relator in addition to the question of legality of his confinement. The Matteawan State Hospital contains a large number of highly dangerous paranoiacs, and I am personally familiar with the cases in many instances. A large majority of these persons were indicted for murder in the first degree. The desire for repeated writs is almost universal with these inmates. One always has a writ pending; and in another case, counsel has a new writ ready to present to the court the moment a pending writ is dismissed.

A writ of habeas corpus in behalf of a relator who is in custody as an insane person and dangerous is quite different from an ordinary writ. It involves much more than the question as to whether the relator is illegally detained. To quote again from the exhaustive and convincing brief of Asst. Dist. Atty. Robert C.

Taylor, of counsel, in the matter of the People *ex rel.* A. Russell Peabody, Relator and Appellant *vs.* Robert W. Chanler, Sheriff of the County of Dutchess, and Robert B. Lamb, Superintendent of the Matteawan State Hospital, Respondents (Thaw case), Reported 133 App. Div. 159, Affd., 196 N. Y. 525 . . . on opin. below

It is obvious that this special habeas corpus provided by §93, Insan. Law, provides a remedy far more comprehensive than the ordinary writ of habeas corpus. It permits an inquiry *de novo* into the prisoner's present mental state whenever and so often as he claims that he has been restored to reason.

It is not probable that the framers of the Insanity Law contemplated investigation and reinvestigation following reinvestigation into the mental condition of patients; yet practically this is the effect of the law in cases in which a command of money affords opportunity for endless writs. Without abridging in any degree the right of prisoners to inquire into the legality of their restraint of liberty, it seems possible to remedy this evil by an amendment of the present law:

§93. *Habeas Corpus*.—Any one in custody as an insane person is entitled to a writ of habeas corpus, upon proper application made by him or some friend in his behalf. Upon the return of such writ, the fact of his insanity shall be inquired into and determined. The medical history of the patient, as it appears in the case book, shall be given in evidence, and the superintendent or medical officer in charge of the institution wherein such person is held in custody, and any proper person, shall be sworn touching the mental condition of such person.

After one such proceeding, upon which it has been determined that the relator is still insane, he shall not be entitled to another such writ within a period of one year, except for cause shown and in the discretion of the judge to whom the application is made.

It is evident that the State Board of Insanity of Massachusetts has recognized the misuse of the writ of habeas corpus by the insane, notably the criminal insane. In "the Massachusetts Laws relating to Insane Persons, revised and codified, June, 1909," is a section on "Commitment of Persons acquitted of Murder, etc., by Reason of Insanity," which reads as follows:

§104. If a person who is indicted for murder or manslaughter is acquitted by the jury by reason of insanity, the court shall order him to be committed to a state hospital for the insane during his natural life, and

he may be discharged therefrom by the governor, with the advice and consent of the council, when he is satisfied after an investigation by the state board of insanity that such person may be discharged without danger to others.

Of course this law does not deprive any person of his right to an ordinary writ of habeas corpus; but on the return of such writ, the issue would be simply to determine as to whether this person is illegally restrained. The question of mental condition is, as it should be, left to those whom training and experience have qualified to inquire into and determine such matters.

At Bridgewater, in the State of Massachusetts, is a State Asylum for insane criminals; and it probably is to this institution that the section just quoted is intended to apply. The statute has been in force since 1873; and it does not appear that its constitutionality has yet been called in question. I venture to say, however, that if the question of its constitutionality should arise, the fact of commitment of a person not convicted of crime, "during his natural life," the only remedy being a difficult and complex *ex parte* proceeding such as provided in the statute, could be strongly urged against the law. In the "Thaw case," the defendant was committed by Justice Dowling to "be detained in safe custody and be sent to the Matteawan State Hospital, there to be kept in said hospital until thence discharged by due process of law." The "due process of law" referred to undoubtedly is indicated in §454 of the Code of Criminal Procedure:

"When the defense is insanity of the defendant the jury must be instructed, if they acquit him on that ground, to state the fact with their verdict. The court must, thereupon, if the defendant be in custody, and they deem his discharge dangerous to the public peace or safety, order him to be committed to the state lunatic asylum, until he becomes sane."

The "commitment," in such case, is "essentially temporary" and cannot be regarded as a sentence. In the Massachusetts statute it is provided that "the court shall order him to be committed to a State hospital for the insane during his natural life." It might well be argued that this is practically a life-sentence of a person acquitted by the jury.

DISMISSAL OF INDICTMENTS IN CASES OF INMATES OF THE MATTEAWAN STATE HOSPITAL WHO ARE NOT CONVICTS.

§120 of the Insanity Law reads, in part, as follows :

.... Any inmate not a convict, held upon an order of a court or judge, in a criminal proceeding, may be discharged therefrom, upon the superintendent's certificate of recovery, made to and approved by such court or judge.

This section does not indicate the procedure in such discharges ; but this is provided by the code :

§661. If the defendant be received into the asylum, he must be detained there until he becomes sane. When he becomes sane, the superintendent must give a written notice of that fact to a judge of the supreme court of the district in which the asylum is situated. The judge must require the sheriff without delay to bring the defendant from the asylum, and place him in the proper custody until he be brought to trial, judgment, or execution as the case may be, or be legally discharged.

As regards the Matteawan State Hospital these statutes apply to inmates classed as "unconvicted," with the exception of those who have been acquitted on the ground of insanity and those transferred to Matteawan from other state hospitals. It seems to me unwise to dismiss indictments in certain of these cases while the defendants are still in the hospital, as is not infrequently done. Many of the "unconvicted" are affected with forms of insanity that are recoverable but likely to recur if the patients are removed from restraint. Typical examples are certain cases of alcoholic insanity. About 50 per cent of those committed to Matteawan since 1859 were classed as "intemperate" (1494 out of 3160). Under hospital restraint and care, most subjects of alcoholic insanity recover ; but if immediately relieved from restraint on discharge from the hospital, renewed indulgence in alcohol is likely to lead to renewed criminal acts. On removal from the hospital, such persons should be brought to trial or otherwise disposed of according to law. A subject of alcoholic insanity with criminal tendencies, so far as his relations to society are concerned, is little different from an "habitual criminal," who, under the statute, may be made subject to legal supervision during his natural life "to the same extent that a minor is subject to the control of his parent or guardian." It is unfortunate that the

Penal Law does not provide for a similar supervision of persons subject to recurrent insanity with criminal tendencies, even after acquittal on the ground of insanity; but it does not appear how such a statute could be framed so as not to invade constitutional rights.

The evil of dismissal of indictments of persons in custody as unfit to go to trial is emphasized by a recent case of which I have some personal knowledge:

PEOPLE OF THE STATE OF NEW YORK AGAINST JAMES COURTNEY,
INDICTED FOR MURDER IN THE FIRST DEGREE.

In November, 1907, I examined the defendant with Dr. William Mabon. We testified that he was, at the time of such trial, in such mental condition "as to be incapable of understanding the proceeding or making his defense." The defendant was then committed to Matteawan, where I saw him on several occasions, improved, but still insane. He was then, however, fairly coherent and connected in his ideas and conversation. He told me that he intended to apply for a writ of habeas corpus. I saw him last in November, 1909. The rest of the history of this case I take from "The Sun" and have no reason to think it inaccurate:

The District Attorney's office heard nothing of the matter until last month, when Mr. Hyde (of counsel for Courtney) informed Assistant District Attorney Nott that he had been in correspondence with Dr. R. B. Lamb at Matteawan and that Dr. Lamb had written that Courtney's condition had not improved. Mr. Nott then wrote to Dr. Lamb, who replied that he believed Courtney's condition of insanity was permanent.

Upon that representation, on March 8 last Mr. Nott went before Judge Foster and had the indictment for murder dismissed. . . .

On March 26, 1910, Courtney was committed to the "Tombs," on an order from Justice Tompkins, of Nyack, before whom he had appeared on a writ of habeas corpus obtained on his personal application by mail.

The prisoner was taken before Judge Tompkins, who conducted the examination himself. No attorney appeared for Courtney and no experts were heard. Dr. R. F. Kieb of the Matteawan Asylum staff opposed the removal of Courtney from the hospital on the ground that he was not a safe person to be at large. Judge Tompkins decided that the prisoner was in a fit condition to stand trial and ordered that he be turned over to

the New York authorities, evidently supposing that the ten-year old indictment still stood. No notice of the dismissal of the indictment had been received at Matteawan.

As a result of these complications, Justice Tompkins decided to remand Courtney to Matteawan and reopen the case. A rehearing was held on April 2 and the case was adjourned for two weeks in order to obtain additional testimony. On April 16, Dr. Mabon testified that it was not safe for the public for Courtney to be at large. The writ was accordingly dismissed, and Courtney was sent back to Matteawan. A new indictment had been prepared to take the place of the indictment that was dismissed, in case it should be needed; but detectives reported that, of the witnesses to the murder, "some had died and none of the others could be found." The crime was committed October 7, 1900.

The case of Courtney is exceptional; but the conditions existing in the State of New York are such, that an indefinite continuance of indictments of persons charged with murder in the first degree would be unjust to assigned counsel, without some modification of the penal law, as will be seen by the following section:

§308. . . . When services are rendered in pursuance of such assignment in a case where the offense charged in the indictment is punishable by death, or on an appeal from a judgment of death, the court in which the defendant is tried or the action or indictment is otherwise disposed of, or by which the appeal is finally determined, may allow such counsel his personal and incidental expenses upon a verified statement thereof being filed with the clerk of such court, not exceeding the sum of five hundred dollars, which allowance shall be a charge upon the county in which the indictment for the action is found, to be paid out of the court fund, upon the certificate of the justice presiding at the trial or otherwise disposing of the indictment, or upon the certificate of the appellate court, but no such allowance shall be made unless an affidavit is filed with the clerk of the county by or on behalf of the defendant showing that he is wholly destitute of means.

It has been held, however, that an allowance is not authorized where the defendant is found, by a commission, to be insane—People *ex rel.* Mullen *vs.* Coler, 61 App. Div. 538.

In the case of Courtney, the defendant's insanity was found by the court on the testimony of the people's experts, and not by a commission; and it is probable that counsel asked for a dismissal of the indictment so as to obtain the allowance by the court.

It seems to me proper that an indictment should be dismissed, while the defendant is still in Matteawan, on a certificate by the superintendent that he is incurably insane and an affidavit by the district attorney that he believes the defendant could not be convicted if brought to trial. To provide for this is the object of the following proposed new section of the Code of Criminal Procedure:

§661a. *When a person under indictment for a crime has been found to be in a state of idiocy, imbecility, lunacy or insanity so as to be incapable of understanding the proceeding or making his defense and has been committed to a state lunatic asylum until he becomes sane, the indictment against him shall not be dismissed while he is in custody in such asylum; and the indictment can be dismissed only after such defendant, in case he should have become sane, has been redelivered to the sheriff, either on a certificate by the superintendent of the asylum that he has become sane or under a writ of habeas corpus. In case the defendant is under indictment for an offense punishable by death, the indictment may be dismissed upon presentation to a court of competent jurisdiction, in the county in which the indictment was found, of a verified statement by the superintendent of the asylum that he is incurably insane and an affidavit by the district attorney of the said county that he believes the defendant could not be convicted of the crime charged in the indictment or of any degree of murder or manslaughter.*

THE ETHICAL ASPECTS OF EXPERT TESTIMONY IN RELATION TO THE PLEA OF INSANITY AS A DE- FENSE TO AN INDICTMENT FOR CRIME.*

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That existing methods of presenting medical expert testimony in the trial of criminal causes is not only imperfect, but is attended with serious evils which tend to bring the medical profession into disrepute with the public, with the bar and with the courts, there can be no question. Such being the case, it logically follows that there is need of reform in this matter, and the question at once arises, How can that reform best be brought about? The method, which as true physicians we would naturally adopt in a case of this kind, would be to seek out the cause of the malady and then to endeavor to secure the removal of that cause by appropriate treatment. In looking for the causes of the evil complained of, we shall not have far to seek. They will readily be found, first, in the usage of courts which permits of the selection of experts by counsel on either side, without regard to their qualifications or standing, usually the only requirement being that the expert so selected is willing to give an opinion in favor of that side of the case; and, second, in the absence of any standard of qualification, fixed by the medical profession, as regards special study and experience in a given branch of medical science, which would, at least theoretically, render the would-be witness sufficiently skilled in that branch or subject to justly constitute him an expert.

The first-mentioned evil could doubtless be corrected by statutory provision, not for the appointment of a "Board of Official Experts," but for the selection of experts by the court in each case; and while it might occasionally happen that a judge in

*Read at the sixty-sixth annual meeting of the American Medical-Psychological Association, Washington, D. C., May 3-6, 1910.

selecting an expert or experts would be influenced by other than meritorious motives, I think, as a rule, the courts could be relied upon to appreciate the responsibility attaching to their action in the matter, and to endeavor to select only men of skill and repute in that particular branch of medicine—men whose opinions would be respected by the bar, the jury and the general public as well. Indeed, the very fact that the experts had been thus selected would tend to give dignity to their position and weight to their opinions. The experts thus selected should be permitted to have free access to all the evidence in the case, also to examine the accused, and then to state their opinion, whether orally or in writing, subject to cross-examination, the cross-examination to be limited to the matters embraced in the opinion. Their compensation also should be fixed by the court at a rate per diem, or by fee, which should be sufficient to induce qualified men to accept such service. Experts selected and paid by this method would be free from suspicion of being biased or influenced in their opinions by pecuniary considerations, while the character and the standing of those who would be likely to be selected would tend to establish confidence in the correctness of their conclusions.

In a very instructive and able paper on the subject of medical expert evidence, Honorable Willard Bartlett, Associate Justice of the New York Court of Appeals, says:

In considering the various projects which have been put forward for improving the administration of justice, so far as expert evidence is concerned, it must be borne in mind that no matter what provision is made for the appointment of official experts, the litigants in an action at law cannot be prevented from availing themselves of the testimony of other expert witnesses. To prevent that, and restrict parties solely to the evidence of the official experts, constitutional amendments would be necessary, involving changes so sweeping as to be antagonistic to the spirit which now pervades our judicial institutions. And, if such changes in the fundamental law were possible, is it at all certain that they would be desirable? I believe that justice in the United States is generally well and honestly administered; but such a thing is conceivable as that a judge might unwittingly appoint incompetent official experts who were anything but representative of the best element in the medical profession. In what position, then, might a physician, sued for malpractice, find himself, if condemned by their opinions and unable to exonerate himself by calling as witnesses his non-official brethren whose testimony would demonstrate that the appointees of the court were wilfully wrong, or ignorantly mis-

taken? A man may be a good judge of law, and yet be a very poor judge of doctors. I should be sorry to have to be treated by the physicians of several able judges whom I have known in past years, and yet, I am certain that in each case his physician would have been the first either of these judges would select for any official or medico-legal preferment within his power to bestow.

Respecting the second source of the evil, that is, the absence of any standard fixed by the medical profession by which the qualifications of a member to give expert testimony may be determined, the cure for that lies in the hands of the profession itself, namely, to fix a standard of qualifications based on special study and experience in a particular branch of medicine which shall entitle a member to rank as an expert in that branch, and at the same time putting its seal of disapproval and condemnation on the practice which now too frequently obtains of physicians posing as experts upon subjects respecting which they have no special knowledge or experience, relying upon their wit and the ignorance of counsel to save them from exposure.

The writer fully realizes that the present method of presenting expert testimony is by no means perfect, but he believes it is far better and more practical than any of the visionary schemes which have been brought forward from time to time by medical societies, by bar associations, and even by certain alienists. Such, for instance, as the appointment of a "Board of Official Experts" by the courts, or by medical societies, or by the governor of the State, etc. In the writer's opinion it would be difficult, if not impossible, to devise any method that will supplant the present one short of a change in our federal constitution. This opinion is sustained by many if not most of the judges who hold that a defendant on trial has a constitutional right to present any proper evidence that might aid him in his defense.

It would doubtless simplify matters, were it feasible to do so, to provide that questions of expert opinion should be passed upon by the court, instead of, as is now the case, by a jury of laymen, who are not supposed to be familiar with the intricacies of psychological medicine. The spectacle of a jury of laymen being called on to decide as to which of the opinions of opposing expert witnesses respecting an obscure and difficult question of disease is correct is a *reductio ad absurdum* which has been too often pointed

out to call for more than a passing mention here. This practice, unfortunately, is one that cannot be abolished, for the reason that the terms of our federal constitution confer upon every citizen when charged with crime the sovereign right of trial by a jury of his peers.

Respecting the propositions to provide for the appointment of a "Board of Official Experts," whether by the governor of the State, by the courts, or by a State commission in lunacy, it is the writer's opinion that none of these methods would be desirable or acceptable, either to the medical or legal professions, or to the public, for the reason that it would savor of class legislation, which is against sound public policy. Furthermore, the prospective advantages through professional prominence and pecuniary gain, whether in fees or in salary, which such appointment would offer, would lead incompetent and unworthy members of the profession to seek appointment thereon through partisan or other questionable influences. Moreover, such a board, even if fairly representative in its make-up, would be a ready target for unfriendly or hostile criticism by their less fortunate brethren in the same line of practice who might, whether justly or unjustly, regard themselves as being discriminated against. Then, too, it would require either a very large board or several boards to provide a sufficient number of experts in the various branches of medicine, surgery and chemistry in which medico-legal questions arise. Says Mr. Justice Bartlett in the paper referred to:

There is not likely to be any radical change in a matter of legal procedure like this, without the approval of the bar, and I doubt very much whether the bar would approve any legislation which would enable the courts or any other appointing power to create a privileged class of expert witnesses.

For the reasons herein set forth, it would seem to the writer that the most practical solution of the difficulty would be to make statutory provision for the appointment by the court of, say, from one to three experts whenever occasion arises, the law to provide that only physicians of repute in the particular branch of medical science to which the question for expert opinion relates shall be appointed, these experts to have full and free access to all the evidence in the case, as well as to the defendant, for the purpose of examination, and then to submit to the court for transmission

to the jury a written report, setting forth their conclusion and the facts in evidence on which such conclusion is based, the cross-examination of the experts to be restricted to matters embraced within their direct statement of facts and opinion, and the compensation of the experts to be fixed by the court. The writer is well aware that lawyers would raise objection to this manner of selecting experts, on the ground that a defendant is constitutionally entitled to the selection of his own witnesses, and to call any witnesses whose testimony would tend to sustain his case—a right which can neither be taken from him nor abridged. This objection, however, would be met by the fact that counsel would still be permitted to call experts in addition to those selected by the court; though it is safe to say the opinion of the official or court experts would far out-weigh any differing opinion that might be offered by experts selected by counsel. It goes almost without saying, too, that this method of selecting experts would always be satisfactory to the prosecuting attorneys.

There is another point in connection with this subject which, in the writer's opinion, should receive not only the attention of this Association but of the general medical profession as well, for the reason that it is frequently a source of discredit to our profession. This refers to the unprofessional practice of certain medical men—mostly pseudo-experts—acting as medical advisor to counsel and as expert witness in the same case. To observe, as the writer has often done, medical men sitting in court at the elbow of counsel, actively engaged in taking notes and preparing or suggesting questions for the latter to put to the witness, also framing questions for the cross-examination of a fellow practitioner and otherwise openly assisting counsel in his efforts to break down the opposing side, and subsequently taking the witness stand for that purpose, is, to say the least, deplorable. If a physician is to appear as an expert witness, he should keep away from counsel while in court and take no part in the conduct of the case which would put him in the attitude of assistant counsel or of a biased or interested party. In the first trial of Thaw the writer was selected by the district attorney to assist him in the preparation of the medical branch of the trial, a service which he accepted with the distinct understanding that he would not appear as a witness in the case.

Anent this subject Mr. Justice Bartlett, in the paper referred to, says:

In my opinion the law can do very little toward making experts or anybody else honest or upright or capable in their particular pursuits. I look for reform rather in the direction of the development of a higher sensibility on the subject in the medical profession itself. It is entirely possible for the doctors of this state or country to so frown upon the practice of acting as medical counsel and medical witness in the same case as to stamp it out completely. There is nothing to prevent a physician who is asked to see a case with reference to giving testimony as an expert from exacting an agreement that his remuneration shall in no wise depend upon the opinion which he may form upon making the desired examination; or, in other words, that he shall be paid just the same and just as much whether his conclusion is agreeable or disagreeable to the attorney who seeks his services. No attorney will refuse to consent to this course unless he is desirous of influencing the doctor to take one view of the case rather than another, because in that event he will get paid while otherwise he may get nothing. A tempter of this sort should be shut out of the doctor's office with no gentle slam of the door. And so in many other ways which might be suggested some of the most serious evils of medical expert evidence may be effectively dealt with by "reform within the party."

Respecting the sweeping condemnation of medical expert testimony in which the courts, the public press, and to some extent the medical press, are wont to indulge, Mr. Justice Bartlett, referring to the common assumption by lawyers and doctors that courts and juries would be sure to get at the truth if the expert witnesses on one side could only be induced to agree with the expert witnesses on the other, cites a case in point which occurred in California, in which the plaintiff, a married woman, was injured in an accident upon the defendant's railroad. In the suit which she brought against the railroad company to recover damages, one of the principal questions was the extent of the injuries which she had sustained. She had been examined by three or four medical men in her own behalf and by three or four other medical men in behalf of the defendant. Both those who testified for the plaintiff and those who testified for the defendant agreed that the plaintiff was suffering from a uterine or ovarian tumor, but there was a difference of opinion as to whether the tumor could have been produced by the plaintiff's fall. A verdict of \$20,000 was rendered against the railroad company. Ten days after the trial the plaintiff gave birth to a child at full term, although still-born, and it

was admitted that there had been no tumor whatever! "Since the time of Mr. Pope," says the Supreme Court of California, "it has often been inquired 'who shall decide when doctors disagree?'" This case shows that serious error may lurk in their conclusions, even when they have agreed. Such an occurrence, if narrated in a work of fiction, would be criticised as so improbable as to be ridiculous; but there is no romancing in the cold type of a volume of modern law reports. The possibility of so serious an error being committed by so many respectable members of the medical profession—for the court speaks favorably of their standing—tends to afford some justification for the popular distrust with which medical expert evidence is often regarded. Continuing, the learned justice says:

In reference to this matter, however, I desire to express my dissent from the sweeping condemnation of medical experts in which the courts so often indulge. There is scarcely a case where expert evidence is taken, in which some of the experts are not perfectly honest. They do not deserve denunciation merely because other experts are dishonest, or because it is often difficult to tell the false from the true. The medical profession itself must help us to make the distinction between the two classes easier. However objectionable are some of the aspects of medical expert evidence, it cannot be dispensed with in the administration of justice. Let us remedy the evils, but, while we are endeavoring to do so, let us avoid that exaggerated denunciation which is calculated to convince the community that no surgeon or physician who takes the witness-stand as an expert is worthy of belief. Such teaching is a libel on the most unselfish profession in the world.

What I have said thus far has been so largely in the nature of destructive criticism, that I may naturally be asked whether I have no remedy to suggest for the manifold evils in regard to medical expert evidence which are generally recognized in both professions. In concluding this paper, let me add a few observations in answer to this question. I should be sorry to feel that the prospect of reform was hopeless. There is one direction in which it seems to me brighter than any other. You have a code of medical ethics which every physician and surgeon is bound in all professional honor to observe. By that code you regulate your own conduct in the practice of medicine, and insist that those who join the ranks of your profession from year to year shall agree to regulate theirs. No statute could practically be more binding. Why may you not extend its provisions so as to embrace the conduct of the medical man when he assumes the role of the expert witness? The matter is absolutely within your own control. You can declare in your code that a certain course of action on the part of a medical expert shall be deemed honorable and

professional, and that a certain other course of action shall be dishonorable and unprofessional. The first steps in enacting such amendments in your professional law would necessarily be tentative. Mistakes would be made which you would have to correct. Rules from which the most good was expected might prove useless, and others which promised much less might prove to be the most effective of all. But in making them and changing them you would be independent of the legislature; you could act solely for the good of your profession, untrammelled by official influence or power; and so far as you desire advice from the bench or bar, I am sure it would be gladly afforded. A signal advantage of dealing with the subject in this way is that it would involve no interference with existing rules of judicial procedure. The rights of litigants or the manner of trying lawsuits would in no wise be affected. The needed reforms would be brought about by the compulsory operation of your own code of ethics acting personally upon each member of your profession. That code, amended as I am sure it might be if the physicians and surgeons of this country took the matter seriously in hand, by commanding medical experts to do what is right and subjecting them to professional censure and obloquy if they did what was wrong, would be more efficacious than any law on the subject which any legislature could enact. It would be your own law, adopted by yourselves for yourselves, and it would have that powerful sanction which belongs alone to laws which are a natural growth out of the conditions which lead to their adoption. To the action of your profession in some such way as this, I look with more confidence than anywhere else for the ultimate accomplishment of all that is desirable in the improvement of medical expert evidence.

In connection with this branch of the subject the writer would take occasion to suggest that it is the duty of the medical profession to raise its voice in solemn protest against the tendency which has lately grown up to heap upon it ridicule and abuse because "doctors disagree," and that consequently all, or substantially all, doctors are dishonest. As a matter of fact, doctors are no more prone to disagree than any other class of individuals where matters of opinion are involved. On the other hand, lawyers are notorious for their disagreements. In fact, in every case that is tried in court we find the contention of counsel on one side is diametrically opposed to that of the other side; and this, too, on substantially the same state of facts. Then, too, judges are also notorious for their disagreements. The higher courts frequently reverse the court below, clear up to the court of last resort; and it is safe to say if there were still a higher court it would be found overruling the court of appeals. How frequently, too, we find

the body of judges constituting the appellate courts divided in the decisions they render, the issue being decided oftentimes by a bare majority of one. And yet nobody would think of suggesting that these judges are dishonest simply because they happen to disagree.

Mr. William A. Purrington, an eminent member of the New York bar, and one of large experience in medico-legal matters, in a recent paper referring to the disagreements of judges whom he characterizes as

that great body of experts who rarely if ever go upon the witness-stand, yet are always under a continuing oath, and in every case from the facts before them render their opinions as to the law. When they give an opinion, whether it be right or wrong in our opinion, it is of binding force until set aside; and that is more than can be said of yours of the faculty, or ours of the bar. I have sometimes wondered whether those judges who have been most denunciatory of the differing conclusions at which reputable medical experts have arrived upon the facts in evidence, have reflected that they, too, belong to a body of experts in the law, whose members often differ, very honestly and ably, in drawing conclusions, even from agreed facts.

Mr. Purrington then goes on to cite in illustration of his point:

The recent medical case of the People *vs.* Hawker (14 App. Div., 188; 152 N. Y., 234; 170 U. S., 189) wherein the facts were agreed upon, and the only question involved was one of law, whether a statute forbidding one convicted of felony to practice medicine could apply to a licensed physician so convicted prior to its enactment; in other words, whether the statute was *ex post facto*. The trial judge decided negatively. The appellate division of this department, by a vote of three to two, reversed him; the court of appeals in turn reversed the appellate division, two of its judges dissenting; and finally, the Supreme Court of the United States, after two arguments, affirmed the court of appeals, three of its members dissenting. Surely no one would presume, because of these differences of opinion to doubt for a moment the ability, the learning and the absolute honesty of these various experts of the law; and it is equally manifest that the frequent differences of opinion among medical experts—the only class we are now considering—should not of themselves alone justify the criticism so freely made.

District Attorney Jerome, in a recent public utterance, declared:

No man has had more experience with experts than myself during the eight years I was district attorney and during that time I recall only one man whose testimony was radically dishonest. Only one of these cases received great public attention, and that was on account of the scandals

connected therewith. These scandals were not, however, save with one exception, due to dishonest expert evidence, but to judicial incompetency. It does not follow because there are alienists who lie on the witness stand that all medical expert evidence should be abolished, any more than that because some lawyers coach witnesses to a point that amounts to subornation or perjury, the conduct of criminal cases should be left entirely to the judge. I have referred to the Thaw case and you all know whom I mean when I say that there was one man who testified on that occasion, who, in view of his testimony in that case, and in view of his evidence since and his own written report, would be expelled from the profession, if you gentlemen had the power to disbar him. I may say that in every case during my term of office the opinion of the experts retained by the State was justified by the subsequent clinical history.

The Hypothetical Question.—Respecting the hypothetical question it must be conceded that it is a very difficult proposition with which to deal, especially so far as relates to any improvement or proposed modification of existing rules of practice relative thereto. The rules of evidence provide for the hypothetical question, and the courts have held that while such question must contain nothing that is not contained in the evidence they do not prohibit the omission of any facts in evidence which counsel may in their discretion see fit to omit. Hence, it frequently occurs that counsel sifts and omits from his hypothetical question certain important facts in evidence which, if incorporated therein, would tend to weaken or discredit his contention, and he is prone to include in his question only such facts in evidence as he thinks will tend to prove his case. Consequently, the hypothetical question usually is a one-sided affair. The writer has frequently suggested, and sometimes insisted, that the question to be submitted to him should embrace a fair résumé of the whole evidence, and when this plan has been followed he has usually found that he could answer the question thus constituted as consistently and to the same effect as he could have answered what might be termed an *ex parte* question. This, it seemed to the writer, has tended to strengthen his testimony in the estimation of the court and of the jury, and at the same time relieve him from appearing to be an unfair, one-sided and partial witness.

The Legal vs. the Scientific Definition of Insanity.—The legal definition of insanity as a test of responsibility for criminal acts, that is, the so-called "knowledge of right and wrong test," pre-

sents a feature of the administration of the criminal law in which the legal profession has made little or no progress for more than half a century, or since the legal definition of insanity was formulated by the English judges in their decision in the celebrated *McNaughten* case in 1843. In fact the criminal code of the State of New York to-day defines insanity in substantially the same language as that used by the judges in the *McNaughten* case, namely:

A person is not excused from criminal liability as an idiot, imbecile, lunatic or insane person, except upon the proof that, as the time of committing the alleged criminal act, he was laboring under such a defect of reason, as either (1) not to know the nature and quality of the act he was doing; or (2) not to know that the act was wrong.

As alienists we can hardly accept this "right and wrong" test as regards responsibility for crime. But as this is the law of the State of New York, and of many other States in the Union, we are obliged to abide by it. In fact, as experts, we have nothing to do with the law. Our function is simply to determine, if possible, the mental condition of the accused at the time the act was committed—a purely scientific question. Now, every alienist knows perfectly well that this so-called legal definition is unscientific and way behind the age, and that in this matter the law has not kept pace with the progress of medical science. Those who are familiar with the phenomena of mental disease know perfectly well that in a large majority of cases in which the plea of insanity is offered as a defense to an indictment for crime, the accused knows the difference between right and wrong in the abstract—a large majority of the so-called "dangerous" or "criminal insane" being paranoiacs. We know that paranoiacs as a rule converse coherently and plausibly, and that they reason logically respecting their delusional ideas, but that they always reason from wrong premises, the mental condition being one of gradually developed delusional ideas of the systematised variety, without marked mental deterioration or clouding of consciousness. So that, in most cases, with us the question is, not whether the individual knew the nature and quality of the act he was doing, and knew that it was wrong, but whether he had the power to control his act and to resist the impulse to do the wrong, or whether

he was actuated by delusion which supplied the motive, impelling him to do the act.

Now, if every form and stage of mental disease were invariably attended by a loss or suspension of the knowledge of right and wrong, such as usually occurs in extreme types of mania, melancholia, parietic-dementia, etc., forms or stages of the disease which are usually characterized by mental aberration so marked as to bring them easily within the ken of unskilled observers who would readily recognize the symptoms which in themselves furnish presumptive evidence of a lack of power to distinguish rationally between right and wrong, no valid objection could be raised to the present legal test of insanity, wrong in principle though it be, for the reason that its practical effect, as applied to the class of cases referred to, would be to establish irresponsibility in substantially every case, regardless of the nature of the act committed. Unfortunately, however, but a small percentage of the insane who come within the jurisdiction of our criminal courts belong to the types of insanity referred to, this class of persons, being usually not homicidal, seldom commit, or attempt to commit, homicide, or what is technically known as crime against the person. In other words, such persons do not belong to the "dangerous insane," consequently there is little or no difficulty in such cases in determining the question of responsibility, for the reason that they readily fall within the legal conception and definition of mental disease. It is the obscure and doubtful cases that so frequently puzzle our courts of criminal jurisdiction, and these are drawn almost wholly from the ranks of the paranoiacs; and this class, as we all know, frequently commit crimes from motives similar in character to those which actuate sane persons, namely, revenge, vindication of personal honor, defense of life or property, etc. But if we seek the basis of these motives we shall find that, unlike the motives of the sane, they are not founded on reality, but are the offspring of a diseased or disordered intellect, a psychopathic state which has deranged the psychical apparatus, so to speak, and left it awry, even though the logical apparatus remains intact. The paranoiac is prone to premise falsely and to morbidly misinterpret the conduct and motives of those about him. And while he may reason logically,

he reasons from wrong premises and in a way that a sane man would not do. Such being the case, it frequently happens that, under the requirements of our criminal code, we are put in the false position of testifying in effect that a defendant was legally sane when he committed the act, that is, that he knew the nature and quality of the act and knew that it was wrong, when as a matter of fact we know that he was insane and irresponsible, according to the teachings of medical science.

It has been suggested that the most satisfactory way to deal with criminal cases, especially capital ones, in which insanity is pleaded as a defense, would be to keep the question of insanity out of the case entirely during the trial, and to allow the jury to pass only on the question of the guilt or innocence of the accused, irrespective of his mental condition; then, if the defendant is convicted, let the court appoint a commission of competent alienists to determine his mental condition. Such a commission could be relied upon to reach a sound and harmonious conclusion. The writer does not pretend to say that this method would be feasible, but it would at least seem to offer an improvement on the present method of determining the mental condition of a defendant which puts upon a jury of laymen, who presumably are not familiar with the phenomena of mental disease, a responsibility which they should not be called upon to assume. If the function of the jury were restricted to a finding on the facts, that is, if the defendant committed the act as charged, and, subsequently, the question of his mental condition were determined, by competent alienists appointed by the court, it is believed that the finding of such a commission would be accepted by the public, both lay and medical, and that there would be no danger of a miscarriage of justice. If this method were feasible under the constitution it would seem to furnish the best solution of expert testimony in criminal cases in which the mental condition of the accused is in issue.

"So long as mind and intention shall be held to constitute the foundation of legal responsibility," says Ordronaux,¹ "so long will their absence be likewise held to exonerate from all imputa-

¹ *Judicial Problems Relating to the Disposal of Insane Criminals*, by John Ordronaux, M. D., 1881.

bility of crime." In other words, before there can be guilt, there must be mental competency to concoct it. And yet, despite this truism, there still exists in both lay and medical circles a wide diversity of opinion as to how far insanity should be held to absolve from criminal responsibility. These diverse and even opposite views have existed from the time that Lord Hale undertook to define the exact extent to which the mental movements were influenced by insanity, and its consequent effect in impairing the responsibility of its victims, down to the present time. As a result of his investigations, Lord Hale concluded that while the milder forms of insanity might not be sufficient to excuse one from responsibility for criminal acts, a sufferer from the severer types of the disease would be excusable for any crime he might commit under its influence. Subsequently, in 1843, the English judges, in response to questions put to them by the House of Lords, in connection with the celebrated *McNaughten* case, formulated a definition or test of insanity which was substantially the same as the one put forth by Lord Hale. In the language of the learned English judges:

To establish a defense on the ground of insanity, it must be clearly proved that at the time of committing the act, the accused was laboring under such a defect of reason, from disease of the mind, as not to know the nature and quality of the act he was doing, or, if he did know it, that he did not know he was doing what was wrong.

From the time this judge-made law was promulgated down to the present day our criminal courts with their traditional regard for precedent have generally accepted it blindly and propounded it to juries in almost identical language, notwithstanding the emphatic protest of medical men that such test is in direct conflict with the teachings of medical science and false in its application to the mentally unsound. As before stated, the Revised Code of Criminal Procedure of the State of New York, Section 21, defines insanity in practically the same terms as those used by the English judges in the *McNaughten* case. Thus it appears that our lawmakers blindly following the dictum of Lord Hale and his successors on the English bench, and ignoring the teachings of medical science, have undertaken to determine by statutory enactment what insanity is and to define the conditions of

responsibility in mental disease by declaring in law what shall be rather than what is, and have thus given us a test which is based on a misconception of the true nature of insanity, and so narrow in spirit and so untenable in reason that every experienced alienist must regard it as artificial, arbitrary and fraught with danger to humanity and to the ends of justice. "The true test of irresponsibility" says Forbes Winslow, "should be, not whether the party accused is aware of the criminality of his actions, but whether he has lost all power of control over his actions." "Make the man's power of controlling his actions the test," says Clouston. "With that view every medical man will agree."

Hence, it would appear, if medical science is correct, that the real question of fact for the jury to determine in criminal trials where insanity is alleged, is: Did the accused at the time he committed the act of which he is charged have sufficient mental capacity to appreciate rationally the nature and consequences of the act he was committing, and, if so, had he sufficient power of will to enable him to choose between doing it and not doing it? It must be admitted that a correct solution of this question, involving, as it does, human life and liberty, is of vital importance; and inasmuch as it relates directly to disease, the facts upon which its solution depends, can properly be interpreted for the jury only by competent medical testimony. If this were done it is believed that much of the conflict of opinion in our law courts respecting the question of responsibility in criminal cases where insanity is offered as a defense would disappear.

THE INTERMITTENT FORMS OF DEMENTIA PRÆCOX.*

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In a previous paper,¹ attention was drawn to three rather unique cases, two of which had for a long time been considered as belonging in the manic-depressive group, but in recent years had shown symptoms which were more characteristic of dementia præcox, and another which had early been diagnosed as paranoid dementia præcox, but which soon after the onset of acute symptoms showed a cyclic course. It was proposed that to these three cases should be applied the term cyclic dementia præcox as being most descriptive. Mention was also made of the intermittent forms of dementia præcox and the present paper is an attempt to point out some of the characteristics of this form and to contrast it with the cyclic form. It may first be well to review the characteristics of the cyclic form: Briefly stated it may be said that cyclic dementia præcox is a form of insanity closely resembling *folie circulaire* in that there are frequently recurring abnormal periods of excitement and stupor, these abnormal periods being succeeded by normal periods, usually of briefer duration. While at first the excitement may seem to resemble that of manic-depressive insanity, closer study will show that there is no true flight of ideas, there is usually evidence of stereotypy. Muscular rigidity, *flexibilitas cerea*, or *hypertonus* is also present and motor restlessness may be slight. The stupor does not resemble that of manic-depressive insanity and is also characterized by muscular rigidity. In the normal periods the patient may for a long time give little evidence of dementia and merely show the narrow men-

* Read at the sixty-sixth annual meeting of the American Medico-Psychological Association, Washington, D. C., May 3-6, 1910.

¹ The Cyclic Forms of Dementia Præcox, American Journal of Insanity, Vol. LXVI, p. 465.

tal horizon of a person who is cut off from active life, but after several years dementia may be apparent. As a rule an emotional dulling being shown before an intellectual one.

It will be seen by a study of the series of cases here presented that the diagnostic difficulties may be great. A number of these cases were considered as belonging to the maniacal-depressive group until later observation had made such a diagnosis untenable.

It is recognized, of course, that no classification of cases can entail precise limits and that there will always be a number which it will be difficult to place and even when this has been done we may feel doubtful as to the correctness of such grouping. It will, however, add to a better understanding of this paper if a few preliminary remarks be made upon the principles which have guided me in my conception of dementia præcox and of maniacal-depressive insanity.

In the first place, as does Kraepelin, I "provisionally" group those cases who dement, excluding, of course, the organic dementias, into one great group which I consider as dementia præcox, recognizing, however, besides dementia or deterioration that certain other symptoms must be present at some time in the course of the disease, these constituting what I call the dementia præcox syndrome as contrasted with the maniacal and the depressive syndromes.

As is well known the maniacal syndrome is:

1. Elation.
2. Flight of ideas.
3. Psychomotor excitability.

And the depressive:

1. Emotional depression.
2. Difficulty in thinking.
3. Psychomotor retardation.

Evidently these are based on the old division of the mental faculties into emotion, will and intellect and as a convenience in teaching I have formulated the following syndrome as characteristic of dementia præcox:

1. Apathy.
2. Dissociation.
3. Eccentricities.

On the other hand, cases which belong to the maniacal-depressive group, besides showing either the maniacal or depressive syndrome, do not dement.

With these broad generalizations as starting points, and the presence of other symptoms, it is possible to make the differentiations into the various sub-groups of these two great divisions. As this paper deals with but one of these sub-groups, it does not seem proper to discuss at length the others, and I shall, therefore, proceed at once to a discussion of the intermittent forms.

So far as I know there has been little written especially concerning the intermittent form, Kraepelin in the seventh edition of his *Psychiatrie* making no reference to it.

In the first place, one may say that the intermittent form of dementia præcox is that which is characterized by a series of attacks whose chief characteristic may be excitement or depression, but in which symptoms of deterioration gradually become apparent. Between these the patient may appear to have become or reached his normal, but in each succeeding attack he may show more and more deterioration, so that eventually hospital care is required. It should be distinctly understood that the slight increase of symptoms which is commonly observed each month and of which Kraepelin speaks² has no reference to what is alluded to above and which seem to be distinct attacks. The menstrual exacerbations are but incidents in the course of the attack.

Before attempting any further elaboration of the subject I shall give a few abstracts which will illustrate the above.

CASE I (No. 798) has been previously reported by Dr. Farrar³ in his *Clinical Demonstrations*. The patient is a woman, single, now aged 38 years, who showed mental symptoms in 1890 while a student at the Peabody and Maryland Institutes when 18 years old. In April she was depressed, had crying spells, soon became unfit for work and was taken home where she remained until August 22, 1890, when she was admitted to the Pennsylvania Hospital, remaining there until January 15, 1891, when she was discharged recovered with a diagnosis of subacute mania. She returned to her home but soon began to lose flesh and in October, 1892, became suspicious of her family, accused her sister of trying to poison her, was violent and obstinate, so that it was again necessary to place her

² *Psychiatrie*, VII. Aufl.

³ Farrar, Dr. C. B. *Clinical Demonstrations*, I. Dementia præcox. *American Journal of Insanity*, Vol. LXII, p. 627, April, 1906.

under hospital care, and she was readmitted to the Pennsylvania Hospital, October 27, 1892, with a diagnosis of acute mania, and was discharged recovered, January 16, 1894.

In going over the notes made during these two attacks, which have been sent us, it is possible to find symptoms recorded which seem to point to a diagnosis of dementia præcox, but it must be remembered that 18 years ago our knowledge of dementia præcox was considerably less than it is to-day, so that it is not strange that the diagnostic importance of these symptoms should have been overlooked.

The symptoms recorded in the first attack are: A marked improvement in her physical condition without a corresponding mental improvement, and that she appeared feeble-minded shortly before discharge. In the second attack at one time she was "indifferent, silent, and unemployed," so that with a physical improvement apathy was shown, and dissociation between the content of consciousness and affect tone was expressed in her statement, "I am eating dead men in their graves, I just love to eat them."

The patient returned home where she apparently led an ordinary life but was overwrought by the care of her sick father and annoyed by a family with young children moving into the same house. She seemed to try to ward off the oncoming attack by taking up her music again and by attempting to give drawing lessons and by a trip from home, but all of these attempts were unsuccessful and she was admitted to the Sheppard Hospital, April 6, 1901, being talkative, confused and emotional and soon showed impulsivity, mannerisms, marked dissociation, and apathy, so that a diagnosis of dementia præcox was made.

The subsequent course has been uneventful, excepting that the patient has shown a periodic course, that is, there have been periods of considerable excitement, corresponding with the menstrual epoch but extending beyond them, alternating with periods of quiet or even of partial stupor.

In this case, therefore, we had an attack of excitement at 18 lasting for 9 months, followed by a period in which she was almost herself for nearly 20 months, when she had a second attack of excitement lasting about 14 months, this being followed by a period of nearly six years during which she seems to have been looked upon as normal by her family. At the end of this remission her last attack began and at the present time has endured for 9 years.

CASE II (No. 1476) is a woman, single, with no occupation.

Her family history is bad, her father and mother being first cousins. Her father is in the early stages of arteriosclerotic dementia and her mother is eccentric. Her maternal grandfather was alcoholic. A maternal great uncle was insane and had a son who was insane. Another great uncle's son was epileptic.

Patient is the eighth child, was born a year after the seventh child. During first year of life she was delicate. She learned to walk before twelve

months old, but while teething became seriously ill, forgot how to walk and at 15 months had to relearn.

In disposition she was quiet, retiring and thought to be bashful. She attended school from 7 until 17 and made satisfactory progress.

Puberty occurred at 17 and was always regular until the first attack of mental trouble in 1900. No mental or nervous symptoms noted at puberty.

Mid-February, 1900, it was noticed that the patient, then aged 22, laughed to herself without apparent cause, became seclusive, hypochondriacal, she later thought that she was an animal and that animals were in her room. Later she became suicidal and attempted to throw herself out of the window and to get a sharp instrument. She showed some posturing and has been untidy. She was admitted to the Sheppard Hospital April 18, 1900, and then first came under observation. She was quiet after a few days of restlessness and remained so until the ninth of May when she had another brief period of excitement which was thought to be premenstrual and it was necessary to restrain her. She showed a gradual improvement and was discharged September 11, 1900, as much improved.

In this case an incorrect diagnosis was made of acute mania based principally upon the history before admission, but from the case notes the diagnosis of dementia præcox is easily made. It being noted that the patient was impulsive, showed mannerisms (many of these being family characteristics, however) some dissociation, and what we later considered to be apathy.

The patient remained at home five years or until October 16, 1905, when she was again admitted. While at home she had led a quiet life without special employment, was somewhat seclusive, but did not show any tendency to suspiciousness or impulsivity, and was regarded by her family as having been about at her normal. She was discharged March 6, 1906, to be again admitted December 17, 1906, and remained under care until August 26, 1907, during which time impulsivity became more marked and a wave-like condition was noted, the patient becoming excited at intervals.

On October 6, 1907, she was again admitted, and discharged March 21, 1908, to another hospital as her condition had evidently become permanent and it would probably be impossible to ever again take her home.

During the two years that she was at this hospital her excitement increased and she has had at least two long periods of excitement beside the usual shorter ones coincident with her menstrual periods.

The last period of excitement was more marked than any preceding and was followed by collapse in which she died November 8, 1909.

CASE III (No. 1401) is a woman who was admitted to the Sheppard and Enoch Pratt Hospital May 1, 1906, at which time she was single, aged 21, and had no occupation.

The family history is negative, but her father died 13 months after her admission of what was diagnosed by the two attending physicians as apoplexy, and as Bright's disease.

The patient is the third of four children and her birth was normal. She was characterized by her mother as a "right forward" child although it would appear that her development was neither precocious nor retarded. Her disposition was said to be bright, but quiet, not talkative, of an even temperament, and fond of company, especially of her own sex, having very few boy friends. Her health had been very good, but she had had one or two fainting spells when about 10 years old which her physician had declared to be due to heart disease, but which a physician who was consulted later stated had been due to indigestion. Measles and whooping cough at about 12 years were the only other illnesses she had had. School life extended from 7 to 17 years, she having graduated in June, 1902, and having done well.

Puberty occurred at 13 and had been uneventful. Her periods lasted 3 or 4 days, were regular, and only occasionally would she have to go to bed on account of initial pain.

She had joined the Methodist Episcopal church at about the same time, but had never taken more than a moderate interest in religion.

The patient's mother was an intelligent woman who gave all the information possible and from her account it appeared that the patient's mental trouble began in the fall of 1902 when she was brought by her mother from their home in North Carolina to a school near Baltimore, where after a week she seemed perfectly satisfied, so that her mother went to Washington to pay a visit, where after two days she received a letter from the patient stating that she would die if left in the school, and the next day a summons was received from the principal of the school. It was decided that the patient should return to Washington with her mother to attend a wedding, and while there she showed decided mental symptoms and her attending physician, Dr. Ruffin, furnished us with the following note on her case: "She was in a condition of great mental depression; it was difficult to get her to respond to questions and then only in monosyllables, and a circumstance which impressed me at the time and seemed to me to have a causative relation was that she was horribly constipated. I could not ascertain from her the length of time she had gone without operation, but the result of high enemata was simply enormous. I do not know that I have ever seen anything of the kind quite as marked. Her tongue was coated moderately, whitish in color, enlarged and indented, and the breath was of disagreeable odor. The pulse was of low tension, not decidedly accelerated, and the extremities somewhat cool to the touch. It was with great difficulty that she could be induced to take food. She remained in this condition from early in October, 1902, until the middle of March, 1903, at which time she had sufficiently recovered to be sent to her home. During this attack Dr. Richardson saw her with me and we considered her condition to be a melancholia. We could assign no cause for its occurrence other than auto-intoxication from obstinate constipation, and perhaps homesickness." She lost weight during this attack but gained rapidly after her return home and weighed 176 pounds in June, 1903.

During the summer she showed a condition of mild excitement, riding and driving a great deal, and buying somewhat extravagantly. This gradually subsided and in December, 1903, she had a second attack of depression, and was treated at her home. By September, 1904, she was able to visit the St. Louis Exposition with her family, took considerable interest in everything, and kept up with the others in all of their sight seeing.

At Easter, 1905, the patient went to Charlottesville on a two months' visit to her brother who was at the University of Virginia. While here she again showed a mild excitement, but not of sufficient degree to cause her family any anxiety. She later decided that she would like to continue her education and came to Washington to enter a school. Two days later she was visited by her mother who found her sick and somewhat emotional. Dr. Ruffin was sent for and continues the above note as follows: "I next attended her in October, 1905. She was brought here with my approval to be placed in school with the understanding that she should do practically no school work. It was hoped that the absence from home and the association with other girls might be beneficial. She was herself very anxious to be admitted to the school and looked forward to her associations with keen interest. She had not been there, however, more than three days before it was found she was rapidly developing another attack, seemingly similar to the first." The patient returned to her home where she remained until brought to the Sheppard Hospital. She spent the greater part of the time in her room, was usually depressed, but would have spells in which she was very talkative, and showed silly laughter. At times she did not wish to eat and gave as reasons that her throat was sore, that she had a pain in her head, etc., but was easily diverted and could then be made to eat well. On several occasions she was found to be soiled in the morning, but beyond this showed no especial untidiness, and later showed an improvement. It is doubtful if insight was ever present. Hallucinations and delusions were not noted and were probably never present. Menstruation was absent from October, 1905, to the latter part of March, 1906, and on its return the patient was a little more depressed for a day or two.

Her mother stated that after each attack she seemed a little worse than after the previous one, that is, she was more talkative and lively than was usual, and it was her belief that the patient had not been mentally well since before the first attack in 1902. Dr. Ruffin corroborated this, saying: "Since her first attack her mental tone has never been what it was before and it has seemed to me that there were many evidences of degenerative changes. Dr. Richardson and I were inclined to rather a gloomy ultimate prognosis, because of the lack of a distinctly adequate cause in the first attack."

On admission the patient showed frequent outbursts of silly laughter, considerable irrelevancy in replies, dissociation, and an almost constant slow psychical reaction. Later she showed impulsivity. Physical examination was normal with the exception of an increased dermatographic and slight increase in the triceps and ulnar reflexes. She usually wore a silly

smile, and would laugh without stimulus. Once she spoke quite coherently of a fall from a horse which she had recently had and of which no history had been obtained, and which had probably occurred at a more remote time or was less serious than she stated. She also showed some orientation as to time. The following stenographic record is representative of what ordinarily took place: Patient made no movement when physician and stenographer entered her room.

Dr. Good morning.

Pt. smiles. Lips are moved at the end of eighteen seconds but no sound is heard.

Dr. (after one minute). What is your name?

Pt. I don't know.

Dr. How old are you?

Pt. laughs foolishly.

Dr. (after 20 seconds). Where are you?

Pt. Are you talking to me?

Dr. What is the name of this place?

Answer inaudible.

Dr. Are you sick?

Pt. (whispering). Yes, I am sick.

Dr. Are you happy?

Pt. smiles.

Dr. Is there anything you want?

Pt. makes a few movements.

Dr. Who brought you here?

Pt. Mother and brother. [Correct].

Dr. When?

No response.

Dr. How many days ago?

No response.

Dr. What day is this?

No response.

Dr. Do you know what year?

No response.

Shortly after this the patient began to complain of pains in her legs and in various parts of her body, that her leg was broken, that she had been operated upon several times, that two of her ribs were out of place. She pulled at her hair a good deal even pulling some out. On one occasion she was found striking her back and uttering such phrases as "Go call Dr. Dunton. My back is broken," "Tell Dr. R. he loves me so." She bandaged the leg which she said was broken with a towel and expressed other somato-psychic delusions. Two weeks after the above record was made she began to talk freely and an attempt was made to get a speech record but she talked so rapidly that it is incomplete.

"Oh Lord! I can almost feel it. I don't know how to read short hand. I don't want to read what she is writing. Forget it. * * (Dr.) When did

you find out that you had this tumor? (Pt.) It was when I was home. For the Lord's sake! He has cut me. Why, you know that I have got two sides to my heart. Forget it. I had this side cut. This tonsilitis operated on. Laudanum on this. Well, feel it. He has got to operate. There is a tumor on this left side. I thought I said the right side. Gracious Lord! It is there. If you don't stop I will die. The last dentist I had hurt me. I fainted so often, but if the kid comes I can't help it. For the Lord's sake. Ask me what doctor, I can't remember. I have been sailing, fishing, no I haven't. Gracious Lord, forget it. I have said that often, well, look here. I am about to die. I connected it right there because the doctor told me. For the Lord's sake. Doctor certainly cut me, and you want to know where. He cut me between the ribs and it bled so much. The next baby comes I won't believe it. Gracious Lord, I don't know whether it is an infant or the devil, Gracious Lord. This bad blood which flows through me is the devil. This tonsilitis has been bleeding so much, and it hurts, and the last time it bled I got the devil, Oh Lord forget it, Oh me." A letter which the patient wrote about a week later shows the same dissociation of ideas. She was somewhat resistive at times, was profane and impulsive and seemed to be living over the physical sufferings which she had experienced in the past, and when complaining of these pains her face would show an expression of great agony.

By August there began an improvement which was progressive so that by the end of October she talked sensibly, but was unable to remember many of the occurrences of the few weeks following admission. She was discharged as much improved, November 6, 1906, when it was noted that she shows some insight, speaks of having been sick, and probably realizes that she is not herself as yet, but it is doubtful if she truly realizes her condition. Her reaction is fairly natural. She smiles rather foolishly, but usually answers questions fairly sensibly in a rather high-pitched tone of voice, making but little movement of the mouth and lips when speaking. Her mother and father considered her better than at any time since her first illness.

The patient called at the hospital July 1, 1907, when it was observed that she had grown stouter, and excepting for a childish reaction seemed to be perfectly well. A day or two later her father died suddenly.

She was last seen during the spring of 1909 when she appeared to be the same and with the exception of the childish reaction showed nothing abnormal. Shortly before this her mother had called to discuss the question of the patient's marriage, as a young man was quite attentive and the mother wished to know what her daughter's future might be. At this time the mother seemed less inclined to consider the patient as different from other girls of her age.

Here we have a young woman of 17 developing an attack of depression in October, 1902, which lasted for about 6 months and was followed by mild excitement, a second attack of depression occurring in December, 1903, and lasting also about 8 months, an attack of excitement developing

in the spring of 1905 and lasting about 6 months, followed by a remission of nearly 4 years to date, during which the patient has been better mentally than at any time since the first attack. The diagnosis of this case is quite clear and I think we may look forward to the patient having other attacks with deterioration eventually so great as to require hospital care. One interesting point in comparison with the previous cases is the long remission occurring after the three attacks which came rather close together and the deterioration appearing to her mother to be less at present than formerly. This last, however, would appear frequently to be due to the observer considering the patient's apathy to be an improvement over the more normal reaction when irritability is shown.

CASE IV (No. 1448) is a woman who was admitted to the Sheppard and Enoch Pratt Hospital October 5, 1906, she then being single, aged 25, and a stenographer, although a part of her work was to take charge of a reading room several evenings each week.

Her paternal grandfather died in 1888, aged 65, of gastric and bowel trouble. He had been addicted to the use of alcohol and drugs, and at 32 had an attack of depression following typhoid. Maternal grandfather had died of tuberculosis at 28. With these exceptions the family history was exceptionally good and included a number of persons of unusual ability.

At puberty, which occurred at 14, the patient is said to have outgrown her strength but no other especial change was noted. She had also suffered with nasal catarrh for years but this had improved under treatment. She was said to have shown a considerable degree of curiosity, and to have "always been childish by nature" on which account she appeared younger than her younger sister, but her parents would not admit that she was below average intelligence. She had become a stenographer in the congressional library, and had also been in charge of one of the reading rooms for three evenings a week.

During her work in the reading room in May, 1906, she met a young man with whom she fell in love, but who evidently did not return her affection, and this outburst of affection was probably an early symptom, as she had previously been indifferent to men. In June she began to complain of nausea, then of occipital pain, and then of insomnia. The last two weeks of July were spent in the mountains and she slept well, but soon after returning to her duties she was somewhat overworked and the occipital pain returned. In September the insomnia became worse, she was "perfectly frantic at night," was emotional at times, and had lost weight. She expressed suicidal ideas and on one occasion said to her mother, "Mother, what would you do if I choked you at night?" She showed self-control in the presence of strangers, which was not present when her family alone were present.

Soon after admission she showed restlessness, and on physical examination nothing abnormal but some cyanosis of the extremities, exaggerated knee jerks, a slight tremor of the hands and eyelids, and somewhat prolonged dermatographia. Her memory was quite good, her attention

fair, but she was mildly self accusatory, claiming that she had been selfish, and seemed mildly depressed, and showed considerable curiosity concerning the other patients. The following record was taken:

(Dr.) What is your name? (Pt.) My whole name is H— W— G—.
(Dr.) How old are you? (Pt.) 25. (Dr.) Are you sick? (Pt.) Well, just of course this nervousness. (Dr.) Are you happy? (Pt.) Not so happy now, no. (Dr.) Why not? (Pt.) I would rather be home, I think, and at work. (Dr.) No other reason? (Pt.) Rather be at home and at work. (Dr.) What is your work? (Pt.) I was a stenographer and typewriter. (Dr.) Did you take letters? (Pt.) Yes, I took letters and transcribed the notes. (Dr.) What about? (Pt.) I was in the library and it was about magazines. (Dr.) You did not have many letters to write, did you? (Pt.) Many letters? No, a great deal was card work, I wrote letters and cards. (Dr.) How many hours a day were you at work? (Pt.) From 9 until 4.30. When I first went it was from 9 until 4. I think if I had been less selfish I would be more happy now. (Dr.) What is your greatest wish? (Pt.) At the present I think to be well and strong again. (Dr.) Do you feel weak? (Pt.) No, I don't feel weak. (Dr.) Do you know the name of this place? (Pt.) Yes, Enoch and Pratt Hospital, isn't it? (Dr.) Do you know my name? (Pt.) Dr. Dunton. (Dr.) How long have you been here? (Pt.) I came here a week ago Friday. (Dr.) Do you like it here? (Pt.) I am sorry to say I don't. (Dr.) What is wrong? (Pt.) It isn't just what I expected it to be. I thought it would be a small sanatorium. Everybody is very kind, though. (Dr.) Have you ever had visions? (Pt.) No. (Dr.) Did you ever hear voices? (Pt.) No. (Dr.) How much is 2×6 ? (Pt.) 12. (Dr.) $6 - 2$? (Pt.) 4. (Dr.) $6 + 2$? (Pt.) 8. (Dr.) $6 \div 2$? (Pt.) 3. This is first grade work. (Dr.) $17 + 21$? (Pt.) 38 isn't it? (slow.) Dr. $143 + 198$ (Pt.) I couldn't do it. (Dr.) $95 \div 17$? (Pt.) I never could do that either without paper and pencil. (Dr.) What is the capital of Maryland? (Pt.) Annapolis. (Dr.) What is the capital of Pennsylvania? (Pt.) Harrisburg. (Dr.) Do you know the largest river in the United States? (Pt.) It's been some time since I studied, it empties into—it's the Mississippi.

As occupation she was given some newspaper clippings to sort and classify in envelopes, but did it very badly. A slow psychic reaction and apathy were soon noticed, and some dissociation. She was taken home on a visit December 15th, and returned on the 29th with the report that she had become excited on the 18th, being profane and extravagant in speech, and had paroxysms in which she would tear her clothing, try to throw herself over the banister or out of the window, and did not sleep well. The next day, she was taken to a sanitarium at Forest Glen and the day before her return had tried to throw herself before a railway train. The same symptoms which have been noted were present until about the middle of March, 1907, when she became increasingly noisy at night so that it was necessary to remove her to the disturbed ward, where she was

noisy, violent, and profane, the following well indicating her general content of speech:

"Won't I die? G— d— my grandmother! G— d— my mother! G— d— my father! Why did they let me go to work when I was sick? When I went to school, if I felt badly, my father would say, 'Don't go to school, for health is of more value than education,' but since I could work and make a penny, why it's Helen, go to work. You'll lose your position. A penny is worth more than your health.' Why did my mother marry a crazy man and have a lot of d— brats?" She masturbated a good deal and expressed regret that she had not gone to a "fast house" rather than come to the hospital. During June she became quieter, and an unfavorable prognosis having been given, she was removed to a private hospital near Baltimore. While here she improved very much and was brought to the hospital by her mother, November 23, 1907, in order that we might see that she was almost well. And such was the impression made upon us. The patient was disinclined to talk of herself or her illness, but talked upon other topics willingly and intelligently. At times she seemed to show a slight apathy, losing her animation. Her improvement had been coincident with the return of her menstruation and dated back three months.

The patient remained at home until December 18, when after a course of medical treatment of eyes, nose and uterus, she suddenly became disturbed one night, but was kept at home until January 18, 1908, when she was returned to the private hospital, remaining there until February 28, when she was transferred to a private hospital in New York, from which she was later removed to the Government Hospital for Insane. Dr. White has kindly furnished me with the following note concerning her:

During the first two months of Miss G's stay here she was very difficult to manage. She was restless, and frequently had paroxysms of violence varying in length from two to fifteen minutes. During these outbreaks she would cry, shriek, throw herself about her room and the ward, beat her head against the wall, break dishes and furniture, pull her hair, etc. Her hair was always disarranged, she was very untidy in appearance and kept her room very disorderly. She at all times objected to taking a bath and protested most emphatically against treatment in the hydrotherapeutic department.

She was voluble, and while her conversation showed flight and distractibility, yet she showed a tendency to repetition, and each day followed the same trend of conversation which constituted fault-finding, criticism of her treatment here and in other hospitals, thought she was not properly brought up, that her relatives were insane, etc. She was at all times boisterous and used profane language. She was well oriented and showed no memory defect; had no hallucinations. After the first two months she gradually became quieter and more easily managed, but showed a childishness of manner and lack of self-control.

On November 19, 1908, she was brought before the medical conference for a trial visit, as her parents desired to take her to the country for one

month, under the care of a special nurse. The consensus of opinion was that the case was atypical manic-depressive psychosis, with anomalous features which were suggestive of dementia præcox. She left the hospital on November 21 and remained in the country for two months, during which period her parents reported that the patient was gradually improving. At the expiration of this time she returned to her home in the city, and soon thereafter she called at the hospital. She showed a marked improvement and at the request of her parents her visits was extended for another two months. During these two months, and up to the time of her discharge, she came to the institution two or three times a week for treatment in the hydrotherapeutic department. We still kept her under observation until June 28th, when she was brought before the medical conference for discharge. There was no change in the individual opinions of the members of the staff as to the diagnosis in this case, but it was conceded that she is of constitutional inferiority of a manic character.

She was discharged on June 29, 1909 as recovered. Since her discharge she has been at her home in the city, has occasionally called at the hospital and the physicians who had her under their care while here have occasionally seen her at other times. Her condition has remained stationary. She entertains, attends social functions, and is considered by her relatives to be in her normal mental state.

She has not returned to her former employment although we understand she is anxious to do so.

CASE V (No. 1981) is a woman, single, aged 35, who was admitted to the Sheppard and Enoch Pratt Hospital October 4, 1909.

Patient's father was somewhat alcoholic and when over sixty had some sort of mental attack for which he was treated at Staunton, and recovered. He died at 77 of apoplexy. Two sisters are somewhat nervous.

When a baby the patient had a severe illness which is supposed to be the cause of her present attack, but of which no particulars could be learned from her brother and sisters who accompanied her to the hospital.

Puberty occurred at 14 and was regular until her first mental attack at 18, when 3 or 4 periods were omitted, following which it was regular until 31.

The patient had an attack of depression at 18 lasting about 6 months, but apparently recovered and took up teaching which she continued until 30, conducting a private kindergarten between 25 and 30. The second attack occurred September, 1906, and lasted 6 months or more. She was treated at a private hospital but did not become normal until some time after discharge. This attack was characterized by agitation and is alleged to have been due to drinking sulphur water. Her next attack occurred during the fall of 1908. The fourth attack began about September 15, 1909, and like the preceding one the onset followed an omitted menstrual period. There was no period during August, 1909, the period occurred September 21st, and on the 22d mental symptoms were noted. The onset of the attacks has usually been in the fall and recovery has

usually taken place in February or March. Both onset and recovery are usually abrupt. Her sister was quite positive that there was nothing wrong with the patient between attacks but this seems doubtful. Mannerisms, silliness, and impulsivity were marked, and the diagnosis of dementia præcox was positive. She was discharged somewhat improved April 16, 1910. At one time her case had been diagnosed as one of advanced hysteria.

CASE VI (No. 1013) is a man who was admitted to the Sheppard and Enoch Pratt Hospital February 7, 1903, at which time he was aged 23, married, and a laundryman.

The family history was negative and there was little to note in his previous history. He was steady and successful at his work, but was somewhat impulsive. A year before admission he complained of a queer sensation in his head and did not sleep well, but this was of short duration. He smoked and chewed tobacco very freely.

The patient was married October 29, 1902, and is said to have been somewhat excited previously but not sufficiently to cause any alarm to his family. In the evening following his marriage he went to a saloon with some friends, and afterwards stated that he thought he must have been given some knockout drops for in the morning at 3 o'clock he grasped his wife by the throat and was determined that she and her family should get up and pray. He continued to be excited and was taken to his parents' home.

He was restless and excited at times, and did not sleep well. Again he would be mute, resistive, assumed attitudes, and showed *flexibilitas cerea*. He repeated phrases, especially those of a religious character, and was rambling in his talk. He showed apprehension, loss of memory, and confusion.

On admission, while there were no striking physical symptoms he was not of robust physique. He showed a poor memory, imperfect orientation, poor judgment, weak attention and dissociation.

The patient improved to such an extent that his friends were urged to give him a trial at home, and he was discharged July 2, 1903. He was next seen November 9, 1909, when he was brought to the Johns Hopkins Dispensary, at which time he showed confusion, somato psychic delusions, poor attention, slow psycho-motor reaction, and quite marked apathy. He stated that following his discharge from the hospital he had worked as a stevedore for 7 months, during which he had lost 35 pounds. He had then secured employment as a shirt ironer in a shirt factory, and had added to his wages by selling shirts in the evening, probably over-working and keeping late hours. He had three children, who with his wife are Romanists, and he had recently worried somewhat as to whether he should not join the same faith. He was kept under observation for 2 weeks, when it being no longer possible to care for him at home he was sent to a state hospital.

The diagnosis of dementia præcox was made when the patient first came under observation, and the interesting point in this case is the remission of six and a half years during which the patient overworked and gave no evidence of his mental trouble. It is such cases which undoubtedly give rise to the belief that dementia præcox is susceptible of cure, and from a practical standpoint such seems to be the case, but I believe that there is always a defect remaining and that ultimately the terminal stage of marked dementia will occur.

The next two cases are somewhat unusual and each one has been the source of considerable debate and of some disagreement as to diagnosis.

CASE VII (No. 1822) is a man, single, aged 26 when first admitted to the Sheppard and Enoch Pratt Hospital. He had been foreman of several fertilizer plants.

The family history was apparently clear with the exception of insanity in three second cousins, sisters, one of whom is a case of dementia præcox, now in a remission of nearly 2 years, whose father has had two attacks of depression during his life.

The patient did not do well in his studies and at 18 years of age went to Baltimore to learn the fertilizer business, remaining in this position for 4 years or until October, 1895, when he had an attack of which the exact details could not be learned. He was under treatment in a general hospital until January, 1896, and seems to have had some sort of fever with a prolonged delirious attack. Following this he was idle until the summer of 1896, when he resumed his work, but has never remained longer than two years in one position and cannot be said to have been more than moderately successful.

In 1899, he had the first epileptiform attack. It is said these are not convulsions, that but 8 or 9 have recurred at irregular intervals since the first, and in them he has been unconscious for 20 to 30 minutes.

Sexually, the patient has indulged to excess and has also masturbated since he was 14 years old. There has been no especial excesses in alcohol or tobacco. He has had gonorrhœa once and denies lues.

In 1905 he was disappointed in love. The same year he again went to Baltimore to accept a position which he kept for but 10 days, summoning his father to meet him in Washington but gave no special reason for such a meeting. It was not until the fall of 1907, however, that his father had any suspicion that the patient might be suffering from any mental trouble, when the patient showed him plans for a fertilizer factory which were drawn directly contrary to those generally approved.

In January, 1908, while at home attending his sister's wedding, he showed his father some poetry which he had written while on the train to advertise the fertilizer business. He also made a draft on his firm for \$50, which his father had to honor, and soon became extravagant in his habits, whereas he had formerly been economical. He also began to develop

ideas of persecution and evidently did not realize that his numerous resignations and changes of location had hurt his rating.

In October, 1908, he had a series of three dreams in which the secret of making men in a chemical way was revealed to him, and he heard the voice of God telling him that he would be the Messiah if he forgave his enemies. "A great light had approached him and whereas he had felt weak and shrivelled up in all of his parts, he experienced a sudden excess of strength and lightness." His physician suggested that he carry out that part of Christ's mission which consisted of doing manual work before he entered on his public work, and he dug and sawed wood all day, following which he was quieter but spoke of his associates having monkey faces, apparently believing this showed their baseness.

After admission he showed none of these delirious symptoms but described them and gave free utterance to his persecutory ideas. There appeared to be mental reduction, apathy, and in view of the foregoing history the general opinion was that his was a case of dementia præcox. One of us dissenting from the general view was inclined to call the case *delire onirique*, but personally I am of the opinion that all of the case reports which I have read of this form of mental trouble really are but of an incident in the course of dementia præcox, an opinion which I gained from Christian⁴ many years ago.

The patient was discharged as improved December 18, 1908, and went to work as a shipping clerk 3 weeks later. He was laid off May 1, and was idle until July, when through his father's influence, he secured employment with the same company as a timekeeper and also kept record of the material used in the repair factory. During the period of idleness he worried a good deal over his inability to secure employment and at times appeared very much depressed. About the middle of November he began work on an itemized report of the cost of construction of a new fertilizer plant, doing this in the evening, and for about 2 months worked 16 hours a day. He lost weight and mid-January, 1910, showed mental symptoms, there being a return of his persecutory ideas. He also wrote vulgar poetry which he read to boys in public places, spent and borrowed money freely.

He returned to the hospital March 11, 1910, as a voluntary patient, showed hypomaniacal symptoms and it becoming necessary to commit him, it was deemed best to transfer him to another hospital, which was done April 7, 1910.

The majority of us still considered the patient a case of dementia præcox, but the physician who had made the former diagnosis of *delire onirique* now considered him to be a psychopathic inferior plus possibly cyclothymia. That he was an inferior seems to me quite true, but I believe the two attacks in which we have seen him are but stages in dementia præcox.

⁴De la démence précoce des jeunes gens. Annales Medico-Psychologiques, Jan.-Feb., et seq., 1899.

CASE VIII (No. 1945) is a woman who when first admitted to the Sheppard and Enoch Pratt Hospital, April 1, 1904, was aged 43, married, with no occupation. Her case is such an interesting one that it is my intention to discuss it more fully in a separate report and shall therefore merely give a brief abstract here.

The patient's father died at 43 of dropsy, and her mother about 53 of brain tumor without mental symptoms.

The patient was born in 1861, and as a child was healthy and bright. She had scarlet fever at 11 and a severe attack of measles at 12 years. At 20 years she had an attack described as brain fever, during which she was out of her mind for 6 months. The patient did not menstruate until 19 and the brain fever was supposed to have been caused by her taking cold during a menstrual period. She was married at 23 and has had 6 children, all of whom are healthy. The patient had nursed her mother during her last illness and in January, 1903, showed irritability, nervousness, excitement, restlessness, talkativeness, obtrusiveness, and some confusion. These became worse so that it was necessary to take her to a private sanitarium April 26th, where she remained until March 24, 1904, when she was taken home, but after a week it was necessary to bring her to the Sheppard. It was noted that the patient showed disorientation, irrelevancy, memory defect, irritability, negativism, suggestibility, and *flexibilitas cerea*. From January to June, 1905, she was excited, noisy, restless, and destructive. June 23-25 she had a scanty menstrual flow, this being the first since February of the same year. The patient gradually improved after this, but was silly in speech and behavior, her handicraft was poorly done, and it was noted that she showed some dementia. It being thought that the patient might be able to enjoy home life for some months at least, she was removed September 21, 1905.

She was readmitted November 21, 1906, having been in a fairly comfortable condition until three months before, since which time her symptoms had gradually increased and on admission she was excited, restless, talkative, irritable and somewhat confused. She also had a few mild delusions of grandeur and of persecution.

The diagnosis made during her first admission was of catatonic dementia *præcox*, and her present attack was considered by the majority of us as catatonic excitement. One of us, however, who had not seen her before considered her present attack as maniacal excitement. About February, 1907, the patient began to quiet and was discharged March 30.

She was again admitted December 29, 1907, her symptoms dating back about a month and being similar to those noted at her last admission. The excitement increased and was not affected by packs or bromide. About the first of March, 1908, she became fairly quiet, but was slightly confused, silly, and showed a tendency to assume stereotyped attitudes. In June this was more marked but gradually subsided and she was discharged October 5, 1908.

Her fourth admission was on July 6, 1909, her early symptoms being

restlessness, extravagance, and the delusion that her husband was sick and needed hospital care. At this time she seemed to me to show a typical maniacal reaction, including speech compulsion, marked flight of ideas, and diminished reaction time, but later the flight of ideas was not so marked, although speech compulsion continued. By the end of September, 1909, she had quieted to a considerable degree and was discharged November 13.

The patient was seen December 13, 1909, she having been sent for that an association test might be made when she was well enough to be at home. This was very poorly performed and the reaction time was increased beyond normal. It was felt that deterioration was certainly present, and I was more positive than ever before that the case is an intermittent form of dementia præcox.

SUMMARY.

The cases of which abstracts have been given may be briefly summed up as to their course as follows:

CASE I. At 18 years an attack of excitement lasting 9 months, followed by a remission of nearly 20 months, when there was another attack of excitement lasting 14 months, then a remission of 6 years, after which the final attack which has endured 9 years.

CASE II. At 22 years an attack of excitement lasting about 6 months, followed by a remission of 5 years; another attack of excitement of 4 months, then a remission of 3 months; another attack of excitement of 4 months, a remission of 3 months; an attack of excitement of 8 months; a remission of 6 weeks, and then the final condition which required continuous hospital care until her death 2 years and 1 month later.

CASE III. An attack of stupor or depression at 17 years lasting 6 months, a remission of 8 months; a second attack of depression lasting 9 months, a remission of 9 months; then a brief attack of excitement, and brief remission each lasting 3 or 4 months; another attack of depression and excitement which endured 13 months and which has been followed by a remission of nearly 4 years.

CASE IV. A mixed attack at 25 years lasting about 1 year, followed by a remission of 1 month, after which an attack of excitement lasting about 1 year; then a remission lasting up to the present time, about a year and a half.

CASE V. An attack of depression at 18 years lasting about 6 months, followed by a remission of 13 years; then an attack of excitement lasting about 6 months, a remission of 2 years and 6 months, and a final attack of excitement from which the patient is now convalescing.

CASE VI. At 23 years an attack of excitement lasting about 6 months and followed by a remission of about six and a half years, after which there ensued a depressed or confused stage which is now in progress, but which I believe is the beginning of the terminal stage.

CASE VII. At 22 a delirious attack lasting probably 3 months. A remission of 14 years, when at 36 there was an attack of mild excitement with delirious symptoms. About a year after the patient had a return of the same symptoms and is still in this attack.

CASE VIII. An attack of brain fever at 20 lasting 6 months. At 43 an attack of excitement during the latter part of which catatonic symptoms were present. This attack lasted 2 years and 9 months, and was followed by a remission of 14 months. The next attack was also of excitement and lasted about 7 months. Then occurred a remission of 8 months, followed by an attack of excitement lasting 11 months, during which catatonic symptoms were present. After a remission of 9 months there was an attack of excitement of 4 months. At the present time, May 1, 1910, the remission has lasted 6 months.

While a number of other cases might be given, probably the above will sufficiently illustrate what is meant by the intermittent form of dementia præcox. We see that while these cases differ in many details they all follow a certain course which, I believe serves to differentiate them into this subgroup. That is, after an initial attack which is more or less typical of dementia præcox, there is a remission in which the patient may seem to have nearly reached his normal. This is followed by other attacks of alienation and remissions of variable duration after which the terminal stage of dementia ensues. In many of these cases the diagnosis is very difficult at certain times, as they so nearly resemble cases of maniacal-depressive insanity in their excitement or depression, and even in the remissions the presence of abnormal symptoms may only be detected by the application of psychological tests for association, memory, attention, computation, etc., as ordinary, every-day contact shows nothing abnormal. It is on this account that we find different observers of the same case disagreeing on the diagnosis, as in Cases VII and VIII, or making a combination diagnosis, as "atypical manic-depressive psychosis, with anomalous features suggestive of dementia præcox," as in Case IV, or "dementia præcox, having exhibited itself especially in paranoid and hebephrenic symptoms, but influenced largely by a periodic manic-depressive activity" as in another case not here presented.

This difficulty of diagnosis can be easily understood by one who has studied cases of this form and seems to me to point to a closer relationship between the maniacal-depressive psychosis and dementia præcox than most of the followers of Kraepelin have been

willing to hitherto admit, and to which attention was directed in my previous paper on the cyclic forms.

It can be easily understood in many of these cases that the importance of their recognition from a prognostic standpoint is great, and by lessening the intellectual strain of an occupation or by changing to one mentally less arduous, the remission may be prolonged, and the dementia arrested, as has been pointed out by Dr. Jelliffe.*

I regret that I do not feel qualified at present to speak positively concerning the symptoms which are of diagnostic and prognostic importance excepting to say that they are those of early, or pre-dementia præcox, and as a prophylactic measure if we find symptoms which are suggestive of dementia præcox the life of the patient should be so arranged as to reduce mental strain to a minimum.

In contrast with the cyclic form the intermittent form does not show such regularity of course and of symptoms as does the former, or in other words there is no fairly well-marked cycle. The intermittent form shows a great irregularity both in course and symptoms and it is impossible to say how long either remissions or attacks will last as is possible with the cyclic form.

I know of but one writer who recognizes the intermittent form as a definite subgroup of dementia præcox, and this is Dr. Wieg-Wickenthal, of Halle, who, in his pamphlet "Zur Klinik der Dementia Præcox,"* makes the unusual grouping into:

1. Hebephrenia and catatonias.
2. Cases with hysteriform-neurasthenic onset.
3. Cases with a depressive-paranoid cause.
4. Cases beginning with marked confusion.
5. Cases with intermittent course.
6. True paranoid cases—"dementia paranoides."

Of the intermittent form he says:

"I come now to a broader group of the dementia præcox psychoses which are characterized by their intermittent course. In these cases re-

* Jelliffe, Smith Ely. The Signs of Pre-dementia Præcox: Their Significance and Pedagogic Prophylaxis. American Journal of Medical Sciences, CXXXIV, p. 107.

* Halle, 1908, Carl Marhold.

missions or exacerbations or the same mental disturbance alternate. The course of these psychoses is characterized by repeated attacks. These attacks sometimes resemble each other more or less, or different forms of psychic disturbance succeed each other at each psychic phase of the illness. The most important types of these attacks are the circular (manic-depressive) for these may assume the form of a periodic pseudo-mania, and finally the periodic or repeated catatonic state of disturbance and confusion. In many cases, as has been said, the single attacks of psychic disturbance differ entirely from each other. The psychosis begins for example, with a condition of confusion which passes off after a time and is succeeded by an apparent recovery, but very often after an initial attack of this sort there remains a change in the disposition or character of the patient. After several months the scene is again opened by a stupor, which may be later followed by a hebephrenic condition which leads very often to the first definite weakmindedness. A whole series of such combinations may be met with in practice."

It will be noted that the above description is applicable to the cases of which abstracts have been given.

It is also of interest to note what G. Deny and P. Roy, in their little book on "*Dementia Præcox*," say regarding remissions:

"If cures are rare and perhaps doubtful, on the other hand, remissions are frequent and sometimes sufficiently marked to allow the patient to resume their previous occupations and gives to their friends illusion of a cure. Actually only the acute phenomena (delusions, catatonic symptoms, crisis of excitement, etc.), are susceptible of improvement, the psychic defect remaining unchanged. There is nearly always present in the course of these remissions certain signs of chronicity, irritability, mannerisms, tics, and affected and bizarre conduct."¹

Believing as I do that Kraepelin's description of dementia præcox applies to a large group of cases and that our knowledge of mental diseases will be increased by a separation of cases into a number of groups and a more minute study of them, I am not in sympathy with those who advocate the restriction of the term to the hebephrenic form nor with those who apply the term to a large group without further differentiation. It seems to me that the cyclic form previously described is a subgroup of this intermittent form and that they seem to point to a middle ground between the maniacal-depressive and dementia-præcox groups. It is on

¹ *La Demence Precoce*; G. Deny et P. Roy, Paris, 1903, Librairie J. B. Balliere et Fils.

this account that I believe that considerable study may be profitably given to these cases and by it we may eventually be able to differentiate mania and pseudo-mania, mild apathy and depression more easily than we can at present, probably by bringing to light symptoms which are at present overlooked or put aside as of slight importance. It is also very probable that by an increase of our knowledge of these last-named groups that we shall be obliged to change some of our present conceptions of them.

SIMULATED FOOLISHNESS IN HYSTERIA.*

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The word "simulation" is involved in so many misunderstandings and divergent meanings that whenever it is used it is desirable to define it, even when, as here, it is not intended directly to discuss the main problems concerning the relation of it to mental abnormality. The two chief connotations of the term in medicine are: (1) the conscious and purposive feigning of a given symptom with the intention of deriving a palpable benefit therefrom, and (2) the deceptive resemblance that one symptom may bear to another. The extreme types of these are easily to be distinguished. An example of the first would be the deliberate feigning of insanity in order to escape punishment for a crime; of the second, the "simulation" of bronchiectasis by an unusual form of pulmonary tuberculosis. There are, however, many different kinds of cases in which the distinction is by no means so obvious, and is sometimes, indeed, almost impossible to make; this is particularly so in the simulation of mental symptoms. It is occasionally a very difficult matter to decide whether the simulation of a mental symptom not really present is due to deliberate design, or to the effect of another, and unsuspected, disorder that is operating independently of the patient's will. The two criteria that are naturally first thought of, namely whether the patient is conscious of the simulation and whether he has anything to gain by its occurrence, are open to many sources of fallacy. Awareness on the part of the patient in no way demonstrates deliberate production of the symptom, nor is it always present at a given moment even in cases of this nature. Again, a symptom that occurs quite independently of the patient's will may be distinctly welcome to him and of considerable benefit, while on the other hand the ad-

*Read before the Detroit Society of Neurology and Psychiatry, February 3, 1910.

vantage accruing from the deliberate feigning of a given symptom may to the observer appear to be quite incommensurate with the drawbacks and suffering endured.

From the extensive and excellent work¹ that has in recent years been done on the subject of simulation of insanity some conclusions stand out with peculiar distinctness. Of these the following may be mentioned: Deliberate simulation of insanity is a rare occurrence, much more so than was previously thought; in the cases of this nature the great majority of the patients show positive mental disorder, most frequently feeble-mindedness, hysteria and dementia præcox; deliberate simulation is commonly the product of motives that in their quality or intensity show marked deviation from the normal, and is an undertaking very difficult for a healthy person to sustain for more than a short time.

In the psycho-neuroses, and especially in the case of hysteria, the problem is even more complex. Purposiveness and imitation are attributes so easily ascribed to hysteria by superficial consideration that it is little wonder that it has taken thirty years' investigation to convince neurologists that the symptoms are not the product of conscious deception. This conclusion, certain as it is, has up to the present been only partially assimilated by the medical profession at large, which still talks of "detecting" hysteria almost as often as of diagnosing it. Some of Freud's recent work may, when imperfectly understood, have the effect of reinforcing this ancient error; I refer to his demonstration that each

¹ See particularly Becker: *Beiträge zur Lehre von der Simulation und Aggravation bei traumatischer Neurose*. Kiel, 1906. *Die Simulation von Krankheiten und ihre Beurteilung*. Leipzig, 1908. Ueber die Bedeutung der Sommerschen Untersuchungsmethoden für die Frage der Simulation. *Aerzt. Sachverst.-Ztg.*, 1908, Nr. 19. Ueber Simulation von Schwachsinn. *Klinik f. psych. u. nerv. Krankheiten*, Bd. IV, S. 69, u. 85. Bolte: Ueber einige Fälle von Simulation. *Allg. Zeitschr. f. Psychiatr.*, Bd. LX, S. 47. Bonhöffer: *Klinische Beiträge zur Lehre von den Degenerationspsychosen*. Halle, 1907. Bresler: *Die Simulation von Geistesstörung und Epilepsie*. Halle, 1904. Jung: Ueber Simulation von Geistesstörung. *Journ. f. Psychol. u. Neur.*, Bd. II, S. 181. Köppen: Ueber die Entlarvung von Simulation bei Geisteskranken. *Deutsche Med. Woch.*, 1907, Nr. 24. Mairer: *La simulation de la folie*. Montpelier, 1908. Peuta: *Die Simulation von Geisteskrankheit*. Würzburg, 1906. Raimann: *Simulation von Geistesstörung*, 1907. Riehm: *Zur Frage der Simulation von Geisteskrankheit*. *Allg. Zeitschr. f. Psychiatr.*, Bd. LXV, S. 28.

hysterical symptom does in fact have a meaning, in a sense a purpose, and serves the function of gratifying an egoistic aim of the patient's. He holds that a hysterical symptom is the symbolic and distorted expression of the fulfilment of a "repressed" (*verdrängt*) wish, that it is the only means open to the patient of obtaining a secret pleasure.³ There is, however, this important difference to be noted between Freud's conception and the current view, namely that, according to him, the whole process always takes its roots in the unconscious, and is usually unconscious throughout; both the wish and the gratification are unknown to the patient. That is the reason why urging the patient consciously to overcome the symptom meets with such limited success. It is only when the underlying process is made conscious that it becomes within the patient's power permanently to overcome the symptom.

The symptom of foolish, silly behavior has long been recognized as a frequent one in hysteria, and is often thought to be characteristic of the mental state of this malady. Only a few observers, however, have noted how closely allied it is to another, equally frequent, mental trait, namely childishness. This latter trait, when prominent, has been given the special name of *moria*. Practically nothing had been contributed to the elucidation of the obscure symptom in question until the adoption of Freud's psycho-analytic method, so that the numerous references to it in the literature need not be dealt with. It is hoped that the following case may throw some light on the nature and origin of it, as well as illustrating the difficulties in diagnosis that its presence may give rise to.

The patient, a boy of 15, was kindly transferred to my care by Dr. C. K. Clarke on September 20, 1909. He was then suffering from attacks of a peculiar kind that will presently be described. The history was that he had been quite well until two months before. On July 21, when at work, he was hit on the head by a number of bobbins which he was piling up above him. He was slightly stunned, but went on with his work. That night he seemed to be a little out of sorts, and lay quiet, curled up on the hearth rug. On July 25 his mother first heard about the acci-

³ Freud: Selected Papers on Hysteria. Transl. by A. A. Brill, New York, 1909, Ch. IX and X.

dent, and on the next day she took him to see a doctor. During these five days the boy's behavior had quite changed, in that he had become moody and sulky, refused to speak to anyone, and resented answering questions addressed to him. The doctor sent him into the hospital, where he rapidly became very excited and even delirious. That night he was extremely restless, had to be held in bed, and did not recognize his mother. The doctor said that he had brain fever, and had his head shaved. On the next day his mother took him away from the hospital, but he continued in the same excited and restless condition for about ten days. During this time he was very noisy and obstreperous, and they had difficulty in feeding him or in getting him to answer any questions. He gradually recovered, but had never been quite well since. In the succeeding two months he suffered from attacks that regularly recurred every ten days. In these he behaved in an exceedingly foolish and childish manner, restlessly wandered about the house whistling, played silly pranks, and teased his brothers and sisters, using rough horseplay; he would slap them until they got annoyed, and then would hug and kiss them to excess. On two occasions he got into a wagon that was outside the door, and aimlessly drove off. He could give no explanation of all these actions, and could with difficulty be persuaded to talk. One curious feature, the significance of which we shall see later, was that he kept avoiding his father, with whom he had previously been on good terms, and that when his father addressed him he would instinctively put up his arm as if to guard from a blow. In between these attacks, which lasted about ten days each, he did not return to his normal state, but continued to behave in a peculiar, foolish and childish manner, though to not such a marked extent. He would often be afraid to go to the closet alone, even in broad daylight, and would insist on his mother accompanying him. Again, he would make only the feeblest efforts to wash himself, so that his mother had to do this for him as if he were a child. He slept well, and his appetite was good, though very capricious.

When I saw him the most noticeable feature was his apparently foolish stupidity. He giggled in a curious silly way, and his behavior was throughout asinine. He refused to speak, and answered questions, in a monosyllable, only after repeated enquiries. He had some slight headache, which was general and

continuous. I was struck by the incongruity between the slightness of the accident and the apparently grave consequences of it. The bobbing weigh only nine ounces each, and had left no mark on his scalp. There was not the slightest evidence or probability of any fracture of the skull, and on careful neurological examination no abnormal physical signs whatever could be made out. The question of diagnosis was at this stage by no means an easy one, for the boy's mental state closely resembled that found in the stage of recovery from cerebral irritation due to physical trauma. However, for the reasons just stated, I felt that the remarkable symptoms could hardly have been produced by an organic lesion, decided that the case was probably one of hysterical automatism, and advised psycho-therapeutic treatment.

On his next visit he was in one of what his mother called his bad spells. In an interview of nearly an hour I never once got him to speak or answer me. He ignored my questions except that he occasionally gave a silly giggling smile. As a rule he sat there stupidly, and would not co-operate in the examination. When one tried to test his reflexes he resented it like a timorous child who does not understand what is being done. After a while he began to blubber and cry, and tearfully clung to his mother's skirt. This culminated in his bellowing "Want to doe home; Tum home with me." He absolutely refused to be soothed by either his mother or me, and behaved like an inconsolable baby, so that finally she had to take him home. The speech alteration accorded well with his babyish behavior, for it is well known how characteristic of early childhood speech is the replacement of posterior *linguo-palatals* by the corresponding anterior ones.

It will be seen at this point that the patient had relapsed into the mental state of a child about four years old, and was acting throughout in correspondence with this. Partial disaggregation had occurred of his later memories, which had lost their normal vividness and significance, and in his phantasy he was living over again the time of his early childhood. As was mentioned above, this is an occurrence by no means rare in hysteria. One of the first descriptions of it was given, under the name of "*état sur-naturel d'enfance*," by de Mongeron,¹ who writes: "On voit tout

¹ Carré de Mongeron: Quoted by Calmeil. *De la folie*, Paris, 1845, t. II, p. 390.

à coup un air enfantin se répandre sur leur visage, dans leurs gestes, dans leur ton de voix, dans l'attitude de leur corps, dans toutes leurs façons d'agir, et quoique leurs convulsions leur fassent faire alors des mouvements à la façon simple, innocente et timide avec laquelle ils énoncent leurs pensées; néanmoins, cet instinct leur fait souvent dire bonnement des vérités très fortes." It is one form of the syndrome described in 1882 by Pitres under the name of *ecmnesia*, which he defines⁴ as a partial retrograde amnesia with reversion of the personality to that corresponding with an earlier period of life. He relates the case⁵ of a girl of twenty-eight who passed into a delirious state in which she fancied herself seven years old, and acted accordingly; this case and the symptom were fully discussed by one of his pupils in a thesis⁶ devoted to the subject. A classic instance of the condition is the famous case Louis V, studied by many observers.⁷ Pitres first pointed out,⁸ and it has frequently since been confirmed, that the condition can in some cases be artificially brought about in hypnosis, a fact well illustrated by the production of the personality Sally in Morton Prince's Miss Beauchamp case.⁹

That the symptom of simulated foolishness (*Dummstellen*) was in the present case intimately connected with the infantile form of *ecmnesia* is evident when the detailed features of it are more closely studied. The foolishness showed all the characteristics of childishness, namely complete irresponsibility, apparent purposeless naughtiness for its own sake, absurdity, silliness and almost imbecile ignorance. Following Freud, I have elsewhere¹⁰ pointed

⁴ Pitres: *Leçons cliniques sur l'hystérie*. Paris, 1891, t. II, p. 219.

⁵ Ibid: *Op. cit.*, p. 292.

⁶ Blanc-Fontenille: *Étude sur une forme particulière de délire hystérique (délire avec ecmnésie)*. Th. de Bordeaux, 1887.

⁷ Camuset: Un cas de dédoublement de la personnalité. Période amnésique d'une année chez un jeune hystérique. *Annales méd.-psychol.*, Jan., 1882. Jules Voisin: Note sur un cas de grande hystérie chez l'homme avec dédoublement de la personnalité. *Arch. de Neurol.*, 1885, t. I, p. 212. Berjon: La grande hystérie chez l'homme. Th. de Bordeaux, 1886. Bourru et Burot: *Variation de la personnalité*. Paris, 1888.

⁸ Pitres: *Op. cit.*, p. 221.

⁹ Morton Prince: *The Dissociation of a Personality*. New York, 1906.

¹⁰ *Amer. Journ. of Psychol.*, January, 1910, p. 3.

out that the occurrence of this particular form of foolishness sometimes seen in hysterical adults has its exact counterpart in the fits of exaggerated childishness at times indulged in by some children. These fits when pronounced are often the prelude to nervous giggling, uncontrollable laughing or outbursts of weeping. The motive actuating the behavior of these children is to delude their elders into regarding them as being "too young to understand," and into, therefore, ignoring their presence. The reason for this artifice is that they may by means of it overhear or see various private matters that they are not supposed to. When a mother chats with her intimate friends over various private topics, frequently the child will resort to the strangest devices in order to stay in the room and listen to the conversation. Then when someone remarks him, and by her look insinuates a doubt as to the propriety of conversing in his presence, he will interrupt his innocent crooning over his toys and indulge in exaggeratedly foolish antics, to disarm, as it were, the suspicions of the company by convincing them of his thorough simple-mindedness and innocence; such children are not always so innocent as they appear. It need hardly be said that this curiosity is in most cases concerned with matters of a directly sexual nature, such as, for instance, obstetric topics; indeed, there is no doubt that children in this way overhear and even witness marital embraces far more frequently than most parents suppose, often with very harmful consequences. Psycho-analysis of infantile memories reveal the remarkable frequency with which the subject had passed through such experiences when in the same room as their parents, or in an adjoining one. The gratification of sexual curiosity may in many complex ways greatly influence the phantasies of children at a surprisingly early age, a remark that no doubt will appear strange to those who do not realize how much richer and more extensive is the psycho-sexual life of young children than, through "repression" and later amnesia, appears to be the case.

To return to consideration of the present patient. For unavoidable reasons I was unable to carry out a full psycho-analysis, but analysis of the actual symptom in question had the result both of elucidating the psychogenesis of it and of thereby removing it. At first the patient disclaimed all knowledge of sexual matters, and in an automatic parrot-like way said that "doctors brought the

babies," a belief obviously inconsistent with the information usually possessed by a boy of his age and class. It soon came out that he not only had the fullest knowledge of the subject, but had passed through a number of sexual experiences. Further, he was able to recall having at the age of four or five experienced sexual excitations in his mother's caresses, and having at different times indulged in various improper phantasies about her. The unconscious motive of his present delirium was, by feigning the helplessness of a child, to obtain a repetition of his old intimate relation with his mother, to get taken into her bed and nursed, to be washed and otherwise cared for by her just as a child; he had even insisted on her accompanying him to the closet and arranging his clothes. The guilty dread of his father, which was mentioned above, arose from his jealous dislike¹¹ that he had as a child felt towards him in relation to sleeping with the mother. His violent outburst in the hospital was occasioned by the fact that he had for medical reasons been placed in an isolation ward which happened to have barred windows. He was terrified whenever he caught sight of the bars, for his guilty conscience gave him the idea that he had done something wicked and had been put in gaol.

After a few weeks' treatment he recovered, went back to work, and has been quite well ever since.

¹¹ See a development of this subject in the *Amer. Journ. of Psychol.*, January, 1910, p. 96, et seq.

THE SIMULATION OF HYSTERIA.

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Tardieu well said, "It is only by profound knowledge of the reality that it is possible to recognize its simulation." The following case is presented in illustration of this thesis. Furthermore, although a great many ruses have been used to unmask a simulator by spying and by methods often called "the third degree," the best procedures of all are those which depend upon the doctor's knowledge of the signs and evolution of disease.

This statement is particularly true with regard to *hysteria*; for that psychosis is one of such apparent variability that, if the concept of the doctor is vague, there is little chance of reaching precision in the diagnosis.

Unfortunately the concept of hysteria still possessed by most medical men is far from precise.¹ The study of cases by a rigorous neurological technique has not received in this country the attention it merits, and which it has received more particularly in France, and more especially since Babinski² first made a breach in the beliefs which had ruled in the days of Charcot. His keen powers of observation and skilful neurological technique had discovered the artificiality of much of the hysteria in the Salpêtrière; and the kind of analysis of symptoms which he has inspired has now removed from the domain of hysteria very many conditions which were formerly included within it.³ Such were restriction of the visual fields and dyschromatopsia; abnormalities of the skin and tendon reflexes; vasomotor and trophic disturbances, such as œdema and skin eruptions; pupillary irregularities and inequalities. Nor is the temperature modified hysterogenically; and the urinary, sudoral and salivary secretions are not altered per se by the psychic state which we call hysteria.

However, hysteria is sometimes manifested in consequence of a physical alteration which affects the neurones. In that case, the same physical alteration may be productive of functional perturbations of the lower neurones too, and there may accompany the hysteria exaggerated reflexes, trophic perturbations, and circulatory irregularities. Furthermore, the physical malady in question may manifest itself by fever and its accompaniments of perturbed secretion. But these themselves are not hysterical; for hysteria may, can and does occur without any physical disturbances whatever.

Hysteria then is merely a mode of reaction of the nervous system. It is purely mental, psychic; and it is determined by purely psychic causes. Even when it occurs in consequence of physically disturbed neurones, it is the psychic stimulus which arouses the particular symptom which we call hysterical in that case. The organic disease merely increases the susceptibility to react in the way we call hysterical.

But there are a great many ways of mental or psychic reaction; and hysteria is only one of these. How then shall we define and characterize that one? As I have discussed this question at great length elsewhere,⁴ I shall not do so further here, but simply adopt the conclusion which declares that by a hysterical symptom we mean "one which is susceptible of production by suggestion and of removal also by suggestion."⁵

Against the adoption of this definition, much has been urged, especially by alienists, who have confused with simple hysteria the compound clinical pictures, which are so common, where hysterical symptoms are only part of another psychosis. The analysis of mental symptoms is much more complex than that of neurological signs; and unfortunately no clear and honest discussion of this matter has yet occurred, such as so much clarified neurological hysteria in Paris in 1907.⁶ I fear that the time is hardly ripe for such discussion; for few alienists are capable of viewing the problem; as they are unfortunate in not seeing cases at their inception and during their evolution, at which time can best be appreciated the pathogenesis, before it becomes masked by the complications of commitment and asylum life. Besides, the alienists' interests are turned towards determination of mental un-

soundness: questions of psychopathology are studied only by the few.

To the practitioner and neurologist in the past, the chief pitfall has been the tendency to confound with hysteria all psychoneurotic conditions. Recent work, however, has given us criteria of ready clinical applicability, and these are laid down elsewhere.⁷

Another common fallacy is to call emotionalism hysteria: they are really very different. Emotion is as a rule evanescent when determined psychically, and is always so unless maintained ideationally. This question has also been recently considered at the Paris neurological society in conjunction with the society of psychiatry,⁸ and also by the writer from a different aspect, before the Southern Society of Psychology.⁹

In relation to *malingering*, some recent authorities believe that the hysterical attitude, whether induced or autogenetic, is in reality a simulation, although an unconscious one.¹⁰ The question is too complex for discussion here, as the psychological ramifications to which it leads do not seem to the writer capable of solution at present. Moreover, "restriction of the field of consciousness"¹¹ is a normal accompaniment of every effective concentration of mind; and indeed the acquirement of this power is one of the objects of education. "The suppressed complex"¹² is a phenomenon which few escape; but in only a few does it produce hysteria or other psychosis. Its rôle is still *sub judice*. At all events, its catharsis¹³ is not recognized as an essential therapeutic arm, and indeed many of us believe that other means are not only simpler but more effective.

AN ILLUSTRATIVE CASE OF SIMULATED HYSTERIA AND MENTAL DEBILITY.

The patient was a young negro accused of murdering his wife, seen in consultation with Dr. Shute, the jail physician, on account of a suspicion that he was a case of dementia præcox. I was informed that some physicians believed him hysterical, and that others thought he was suffering from syphilis of the nervous system.

On examination, I found a well developed man who showed no abnormalities of *motility*.

REFLEXES.

The knee-jerk was made very violently (the explanation of this will appear); but there was no corresponding excessive reaction on tapping the tendo-achilles, nor was there extension of the great toe when the sole was stroked. The abdominal, cremasteric and conjunctival and pupillary reflexes were present and equal.

SENSIBILITY.

His Suspiciousness.—He was very unwilling to close his eyes for my examination of the sensibility; and when touched by wool on the right side, opened them and jumped in alarm. He stated that he could not feel at all on the left side; but all his responses were made after much delay, and he was evidently suspicious and alarmed. The sense of attitudes was not lost; for though he pretended not to know in what position I had placed his left foot, he imitated that position when asked to do so. He declared that he could not feel the increase as I gradually augmented to 15 kilograms my pressure on the left shoulder. As he was unsupported and in the upright position, he must have been conscious, at least, of the muscles of the opposite side acting to maintain his attitude. Of course, even had the impulses from the muscles on the affected side been interrupted, as he pretended, the sound side would have detected the pressure; but he persistently declared that he felt nothing at all.

The diagnosis of simulation was clinched by the fact that though he pretended not to feel a pin-prick anywhere on the left side, yet when I distracted his attention by making him examine some pictures¹⁸ I had brought to elucidate his mental state, and jabbed him unexpectedly with a pin in the lower part of the left chest, he not only started violently, but he placed his hand over the spot, and first looked down and then at me. As I gave no sign, he slowly returned his eyes to the examination of the picture. The visual fields were not contracted.

As to his mental state, though it was apparently very dull, the stupidity he affected did not concord with the results of the tests I made. When I asked him how long he had been in jail he pretended with a vague stare not to know, eventually saying, "Two-three years" (he had only been a few weeks).

By adopting a matter-of-fact manner and ignoring his expecta-

tions of meeting with a naïf credulity to which he had evidently been accustomed, I succeeded in learning that he had been footman to a gentleman in the Department of Commerce and Labor, who lived in a hotel and who kept a white maid and a colored coachman who lived out. He did not admit, however, the remembrance of his name. His intelligence was thus of too low a grade even to pretend a tenable amnesia. I then showed him the pictures, in which at first he pretended not to recognize a tree; but later he saw the absurdity of his first statement that a man was holding in his hand a stick, when in reality it was a hose from which water was issuing; for he not only saw the absurdity when told, but detected the break in the hose. My experience shows that not every individual, even of good intelligence, detects this discrepancy. In another case, he recognized that a horse pulling a sled up hill was not properly hitched, the chain not being taut; this discrepancy is rarely detected by patients. He thus showed a power of perception utterly at variance with the stupidity he alleged to me and to previous observers. Some weeks later, he was said to have contracture of visual fields. On examination, he again alleged hemianæsthesia; but I again tripped him up on one occasion, although several methods failed, on account of his previous experiences. However, he ultimately confessed to feeling pinches on the back of his hand. He related various events to me quite clearly and accurately.

Being given the benefit of a doubt which should not have existed, he was sent to the asylum; and I am informed that now he shows no somatic symptoms, and merely the mental state of belonging to a low type of intelligence without any psychosis.

I should add that the hemianæsthesia presented the characters of the hysterical type,¹⁸ that is to say: (1) it was absolute; (2) affected all segments equally, and (3) reached the mid-line exactly. Whether its *source* was in medical suggestion or simple simulation could not be ascertained; for of course the patient did not confess; and the numerous medical examinations which had been made without the precautions upon which Babinski¹⁹ has insisted afford a strong presumption of suggestion of medical origin; for it is the commonest source of anæsthesia of this type. The exaggeration of the knee-jerks was a voluntary one, and can be easily simulated, as anyone can prove by trying it. This mode

of reaction can be detected by an experienced observer. It probably was the result of the interest shown in it at the first examination.

THE GENESIS OF SIMULATION IN HYSTERIA.

The case was clearly then, one of simulation from desire to avoid punishment for the crime he had committed. The form in which the symptoms manifested themselves was determined by the faulty technique in previous medical examinations. The fault was similar to that stigmatized by Soury¹⁹ when he criticized Rainaldi's²⁰ localization of cortical centers in conformity with the symptoms manifested when he tapped different points of the crania of patients during hypnotism: "The symptoms corresponded with the text-books which the different experimenters had read." What the observers had described was the result of their own suggestions.

And so it was in this case, both for the hemianæsthesia and the knee-jerk. Moreover, by his mental reaction, the patient did his best to conform to the dementia syndrome which his interlocutors had in mind. But when a precise and rigorous method of examination had been pursued without *parti pris*, a very different picture presented itself, that of deliberate simulation in an ignorant person of low intelligence.

Many alienists have stated that a simulator is of necessity abnormal. While in the strict sense this is true, yet in some cases it is only so on account of a faulty environment having determined anti-social reactions in a person in himself quite capable of normal social reactions had the environment been healthy. The trouble is sociological rather than medical.

On the other hand, simulation is often performed through imitation, which is a form of suggestion. The best example of this is the psychic contagia so frequently seen in hospitals among the attendants and patients when these are of inferior intellectual grade. The hysterical crises of Charcot's day were a striking example. Now-a-days, a case of appendicitis in a woman's college will bring twenty girls to the doctor complaining of symptoms which they imitate according to fancy. I need not here insist upon the psychology of imitation, upon which these phenomena depend. They are inextricably intermingled with those of suggestion.

Again, consciousness is a matter of degree; and a person who imitates or is suggested into a symptom without knowing how or why may conveniently be called a hysteric: he is not clearly conscious of the process by which he believes. The simulator, on the other hand, imitates his symptom deliberately and with intent to deceive. The line is not easy to draw; for each consciously or unconsciously grasps at every straw by the way in order to fortify and make to prevail his mental pose. Both states are favored by the same mental make-up. Its tendency is towards impressionability without complex co-ordination, and to facility of judgment without reflection. The state is commonest during the pubescence of young girls, and is conduced to by faulty education in conjunction with the tremendous demands for psychic readjustments at puberty.

THE DIAGNOSIS OF SIMULATION.

NEUROLOGICAL SIGNS.

The difference between the deliberate simulator who wishes to gain an end and the real hysterical is that the latter cannot be tripped up in the way in which this patient was trapped. When by psychotherapy, a hysterical anæsthesia is made to disappear, the patient continues to feel for some time at least, *i. e.*, until the suggestion which has caused the anæsthesia regains the ascendancy. Our malingerer on the contrary showed that he felt only when he was surprised into doing so, and never expressly. A true hysterical is, as a rule, unsuspicious; for he is so dominated by his induced-idea, in which indeed he believes firmly, that he has no cause for alarm.

I do not intend to discuss our patient's simulation of dementia and amnesia. The means for unmasking this very common attempt are well known; they need not be insisted upon, as they are brought out, although shortly, in the history.

Simulators often pretend *motor disability*. If it is hemiplegia, the subject does not, as a rule, swing the leg as does a truly paralyzed man.

Again, when arising from a lying position, the simulator uses both haunches, which a man who has a completely paralyzed leg is unable to do.

If the arm is alleged to be affected, one will always be able to detect different inequalities in the grasp as measured by the dynamometer at different times. This is most clearly shown when the simulator's attention is distracted while he squeezes the instrument.

If the arm is contractured, to and fro passive movements would generally reveal anomalous muscular contractions especially while the patient's attention is diverted from what one is doing.

A completely paraplegic man, even though he may sit propped in a chair, is incapable of moving himself onto another one: a simulator who does not know this can be unmasked.

In a simulated paralysis, there is no diminution or increase of tonus. This can be shown by the fact that there is no depression of the affected shoulder or falling of the hand or foot when at rest; and the examiner cannot overflex the forearm or hyperextend the knee.

The "hand-falling sign" of Ramist² is ascertained by gently maintaining the patient's hand and forearm in a vertical position while his elbow is rested upon a table, bed or the arm of a chair, and while distracting his attention, quietly letting go the hand. If there is an organic paralysis, the hand will fall; if not, it remains extended for a considerable period.

Contractures.—Severe hemiplegia with *contracture* is always accompanied by associated movements. There are no such movements in psychic or simulated paralyses. When an effort is made to move the paralyzed limb, the movements which occur on the other side of the body are always the same in the same case; and they correspond to the strongest normal movement of the limb. In the arm, it is flexion towards the mouth; in the lower limb, it is extension, accompanied by elevation of the heel. An important fact is that organic contracture is never complete, is most severe distally, and is usually in the antagonists of the strongest muscles.

The Walk.—In walking sideways, a paralyzed patient only drags the foot on the floor when walking towards the sound side; simulators usually will drag the foot along the floor in walking towards the side they believe unsound.

I need not insist upon the now well known dorsi-flexion of the toe which characterizes organic affections of the cortic-spinal

path; nor need I discuss the combined flexion sign, which we also owe to Babinski; and I need only mention the sign described by Hoover, and its modification of Zenner, which depends upon the synergic downward pressure of one lower limb when a patient attempts to raise its fellow while both are extended upon the bed. They are all now elementary neurological tests.

Sensory Symptoms.—To detect the simulation of a hyperæsthetic area, the examiner may press at the same time with two fingers, one on the painful spot and the other close by, so as to cause both impressions to be felt as one. Pressure on the alleged hyperæsthetic area is then to be gradually ceased. A simulator will continue to complain of pain. Of course a really painful spot will cause a more rapid pulse when it is pressed upon, and may also produce homolateral dilatation of the pupil. But these signs are both inconstant and difficult to estimate even with the aid of the sphygmomanometer, which may, however, show an alteration of the plateau and a dicrotism.

It is very difficult to unmask simulated deafness; but simulated blindness is often revealed by an affection of clumsiness in buttoning the coat, touching the fingers together, striking a match, etc. A really blind man is quite adroit in any of these manœuvres. A hysterical patient with contracted visual fields does not fall over objects placed to either side, a simulator does so. Hart-ridge's²¹ modification of the Flees' box is very convenient in unmasking simulated amaurosis of the eye.

The patient who simulates aphonia will pretend that he cannot whistle, which a hysterical generally does quite freely.

The simulation of hysterical *convulsions* may be taken for epilepsy, which itself is well known to be often simulated. In the true *epileptic fit*, the pupils are, however, paralyzed or at least sluggish; and blood and urinary changes, chemical or physical, should render the diagnosis not difficult.

Flora²² has alleged that the muscles that are weakened in the course of a traumatic neurosis "nearly" failed to respond by tetanos to long faradic stimulation. His assertions have not been confirmed; and I have no experience of the test. The same may be said of Lombroso's allegation that the temperature is one degree lower on the diseased side.

In conclusion, I need only emphasize the importance of a knowl-

edge of, and capacity to use at the bed side, neurological signs, which, in conjunction with clear conceptions of the natural history of nervous disease are the only means by which the physician can hope to diagnose the simulation of hysteria.

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METABOLISM IN DEMENTIA PRÆCOX.

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THIRD PAPER.

Following the studies upon the metabolism in dementia præcox,¹ already carried on by one of us, we now publish the results of four new cases examined, to which we add, as a comparison, another case of manic-depressive insanity. Two of the four cases of dementia præcox studied belong to a phase of acute exacerbation of the illness in its chronic phase; the other two show a dementia of long standing. All these patients have been studied very carefully over a long period in the Institute; so the diagnosis of their mental state may be considered quite certain. In this series of researches we devoted special attention to the azotic balance, and to the proportion between the various forms of sulphur eliminated in the urine:—inorganic, ethereal, and neutral sulphur. Researches were made as follows: The patient was kept in bed during all the period of experiment, attended by a special nurse and put on a special diet, some days before the collection of the feces, that he might reach an equilibrium on the new diet. This diet was always made up of cows milk 1000-2000 ccm., fresh eggs 200-300 g., sugar 50 g., salt 2 g. According to the individual weight, the daily quantity of milk and eggs given varied, so as to afford every day 25-30 calories 0.20-0.25 g. of *N* pro *Kg* of weight, a sufficient quantity to keep the equilibrium during the continued rest in bed. For each experiment the milk was first mixed in a large receptacle, then the daily ration transferred to

¹ G. Pighini—Il ricambio organico nella demenza precoce. *Rivista Sperimentale di Freniatria*, XXXII, I-II, 1906.

Id.—Il ricambio organico nella demenza precoce. Nuove ricerche. (*N*. NaCl, C, Ca, P, K, S.) *R. Sper. di Freniatria*, XXXIII, II-III, 1907.

Id.—The organic metabolism in dementia præcox (Notes I and II), *Archives of Neurology and Psychiatry*, Vol. IV, 1909.

large Erlenmeyer flasks was sterilized. With a small portion of this milk a *N* and *P* determination was made. Four or six eggs were used, the weight of the shells being deducted. From the different determinations made of *N* and *P* content of the whites and yolks, and calculating 3:2 the proportion of the two substances, we came to the following averages which we followed in calculating the amount of these two elements in the diet used: $N=2.087$ per cent; $P=0.2799$ per cent. Then we could calculate every day with sufficient exactness how much nitrogen and phosphorus was introduced with the food. The urine was collected with care and examined every morning.

Limiting the beginning and the end of the experiment with a high clyster of 1500 ccm. of distilled water, feces were collected, broken up in water and slowly evaporated at 100° C, dried in an oven, pulverized and weighed for *N* and *P* determinations. The methods used were as follows: Kjeldahl for *N*; for *P* and total sulphur, incinerating and fusing with nitrate of potash and carbonate of soda, and weighing the pyrophosphate and the bisulphate. According to known processes: the ureometer of Hufner for the urea; the inorganic and ethereal sulphuric acid according to Salkowski; total sulphur according to Schultz. Often the research was carried on with two methods at the same time as a control.

It was our intention to make a comparison between the metabolism of many cases belonging to several mental disease groups in definite clinical phases, but our work was interrupted. We publish at present these few cases, which are interesting in that they confirm in a great part the former studies made in our laboratory, and they tend to stimulate this method of research, which is by many considered false and without result. Among the five cases examined, the manic-depressive one gave results that may be considered relatively normal. They agree with the commonly accepted figures concerning excreted metabolic substances, and there is found a perfect balance of nitrogen and phosphorus; and while they show us, on the one hand, that in the acute phase of this disease, in all probability there are no alterations of metabolism; on the other hand, they give us valuable data for comparison with other results obtained under the same conditions of experiment and with the same diet.

We will present, first of all, this case of manic-depressive insanity with which we shall compare the results of the following four cases of dementia præcox:

CASE NO. 1.—Malag. Giosuè (Table 1). Male, age 38, by trade a hand-craftsman. He has been always a hard-working man, of a mild character and a rather acute intelligence. He never drank to excess and was a moderate smoker. Five years ago he was troubled with general weakness, a stubborn indisposition, a psychical depression that progressively accentuated into symptoms of profound melancholy. Also, there were anxiety, tachycardia, a sense of ruin, and of a near death. He was brought into the asylum, where he was put on general treatment, and in a few months he had recovered. In April, 1909, his trouble began again with the same symptoms: physical and psychical depression; profound melancholy, for which he himself could not find the reason; a sense of oppression over the chest and an incapacity for attending to any work. His ideas, though they answered to the cœnesthesia and to depressed feelings, are clear and well ordered. A week after his entering, when he began to get better, the patient was started on the metabolism examination, to which he willingly consented. Physically, nothing abnormal was made out. The pulse was strong, between 60-90 per minute, the temperature between 36°-36.5° C. A month after, the patient recovered, left the asylum; but after some months, during which he was entirely well, had another relapse, and was re-admitted again, the 23d of October last. Then, the symptoms were typical of *manic-depressive insanity*. During the period of experiment, from the 8th to the 17th of April, the patient consumed every day 1500 to 2000 ccm. of milk and 6 eggs. In the milk was found: $N = 5.392\%$; $P = 0.52\%$. Total weight of feces dried was 330 gm.

It is seen in Table I that the balance of nitrogen and phosphorus may be considered in equilibrium; that urea and urea nitrogen represent normal quantities, comparing it with the medium figures obtained by Schultz and by Gumlich with an animal diet (87-89 per cent of N urea). The ethereal sulphur and neutral sulphur stand in normal relation to the total sulphur. The average daily amount of ethereal sulphuric acid (0.09 gm.) is within the normal limits according to Noorden and Biernatzki, neutral sulphur representing 19.96 per cent of the total S shows medium values. The amounts of nitrogen and phosphorus eliminated in the feces are maintained within the physiological limits. We can consider the metabolism of these ten days as normal. We cannot say the same of the metabolism of the four cases of dementia præcox which we have to describe. The first two cases represent a period of stasis of the disease in a much advanced phase; the last two show acute symptoms of the disease in the initial phase.

CASE No. 2.—Sol. Ermelia Linda (Table II), female, age 25. She is pale, anemic, undernourished; was received in the asylum two years ago. The mental symptoms appeared slowly with a change in character and habits, ideas of persecution, and suicidal tendencies. The condition gradually became worse. She has had at intervals periods of light sensorial excitement, during which it was necessary to resort to artificial feeding. At the present time she is quiet and apathetic; does not respond to any stimulus, and is profoundly deteriorated. She presents symptoms of a slight bronchitis, but no sputum could be obtained to determine the nature of this trouble.

On the 13th of February, 1909, the experiment, to which she willingly assented, was begun. From the 16th to the 25th the feces and urine were carefully collected. During all this period the patient remained quietly in bed. Her temperature was normal, and the pulse, though rather weak and frequent, was regular. About a month after the experiment, bronchial symptoms became more evident at the apex, and the bacillus of Koch was demonstrated in the sputum. At the same time the general conditions grew rapidly worse, and symptoms of subacute tubercular peritonitis were manifest. The 17th of November, 1909, the patient died in a marasmic state; and at the autopsy were found some tubercular lesions in the lungs and peritoneum. The pial meninges were slightly opaque, the cerebral hemisphere anemic without evident macroscopic alterations. During the experiment the patient took on an average 1500 ccm. of milk and 4 eggs. The milk given contained: $N = 5.402\%$; $P = 0.430\%$. Total weight of dried feces was 195 gm.

CASE No. 3.—Rom, Marianna, female, age 20 (Table III). A brother, a case of dementia præcox, recovered in this asylum. The patient, a servant, was intelligent and industrious, until about a year ago. In August last she did her work reluctantly. Sleep was poor. She was mute at times and again often excited in response to ideas of persecution and hallucinations. She was dismissed from her position and returned to her family where she became worse and continued in a state of anxiety and fear. Oftentimes she was controlled by hallucinations. She was extremely erotic. She was sent to the asylum because of her suicidal tendencies. When she was admitted, she was a pleasing, rosy, well-nourished girl. She showed a profound alteration in her imagination and in her mien; she insisted on believing she had come to the hospital as a nurse; she mimicked the habits of one, took her keys and tried on all occasions to assume the functions of the nurse. Her physical condition gradually became less favorable and she took the nourishment poorly. The mental functions grew steadily more feeble. In the month of May, during which this study was carried on, she was rather careless in habit and quite disturbed mentally. Mannerisms were present, and negativism was noted. Because of resistance by the patient, this experiment was not completed. Thus, only in the six days from the 18th to the 23d was it possible to collect completely the feces and urine, and to get her to take all of the food: our experiment

then ought to be limited to the consideration of only 6 days. At the present time, January, 1910, the patient is in the same physical condition, but in a more advanced state of dementia. During the experiment, she took one litre of milk and six eggs a day. In the milk there was $N = 5.381\%$; $P = 0.420\%$. Dried feces of the six days weighed 71 gm.

CASE No. 4.—Ross, Alfredo (Table IV), male, age 29. A sister is an hysteric of long duration. The patient was a clerk in an apothecary shop until a short time ago, and showed a normal assiduity and intelligence. In the last months of 1908, his character gradually changed. He became irritable, showed less inclination to work, and was dismissed. During this unoccupied period he became quiet and taciturn; with periods of psychomotor excitation were alternated phases of mutism. Having shown suicidal tendencies, he was admitted to the asylum on the 17th of February, 1909. He is a beardless young man, of a delicate constitution, rather pale, and having a negativistic mien. Being asked over again his name, he answers: "Bardolin." His ideas are confused, he expressed himself vaguely, and with invented words. On the 20th, rather suddenly, he began to strike his head against the wall, evidently with suicidal intent, and shortly after he fell into a catatonic and stuporous state. He was put to bed, where, during ten days, he continued agitated, rigid, very confused and stuporous. In moments of great psycho-sensory agitation he saw the room populated by strange and terrible beings, and called to them aloud, carrying on an unintelligible conversation with them. On physical examination nothing noteworthy was met with; lungs, kidneys and intestines functioned regularly. His temperature was elevated during the first five days of the acute poussée, then it returned to the normal. When he had become more quiet and tractable, although continuing to show the hallucinatory symptoms and the subcatatony, the experiment was begun. The 1st of March, he began the diet, and from the 3d the urine and feces were carefully collected. During ten days the condition of the patient was stationary, but at the last a little improvement was noted in his appearance, and a greater orientation of his ideas was evident. The temperature, pulse and change in weight, during the acute period, beginning February 20 are here given:

		Morning °C.	Evening °C.	Weight Kg.
February	20	37.3	37.8	55,200
"	21	37.3	37.5	
"	22	37.2	37.4	
"	23	37.8	37.5	
"	24	36.8	37.1	
"	25	39.9	36.7	
"	26	36.9	38.4	
"	27	36.1	36.4	
"	28	36.1	36.5	
March	1	36.4	37	
"	2	36.3	36.6	

Pulse 90-103

		Morning °C.	Evening °C.	Weight Kg.
March	3	36.7	36.7	54,000
"	4	36.4	36.5	
"	5	36.9	37	
"	6	36.3	36.7	
"	7	36.1	36.5	
"	8	36.2	36.5	
"	9	36.4	36.4	
"	11	36.4	36.5	
"	12	36.3	36.8	
"	13	36.4	36.6	
"	14	36.5	36.5	53,200

Pulse 80-95

After the experiment the patient continued to get better; he became calmer and more orderly in his manner, and no longer showed evidence of hallucinations and acute exacerbations. Intelligence, after the crisis, was rather diminished, and so it is at the present time after almost a year of illness. Now, the patient is apathetic, shows no affection for his family, and is without aspirations. He has abandoned his profession, and occasionally shows some idea of persecution, and is very changeable in emotional tone—some days meek and gay, intractable and gloomy others.

During the ten days of experiment he took nearly 1250 ccm. of milk and 4 eggs a day. In the milk there was $N = 5.39\%$; $P = 0.423\%$. Weight of all the feces dried, 117 gm.

CASE No. 5.—Paterl, Irmo (Table V), male, age 22. He presents a serious psychopathic inheritance. Two years ago, having entered the asylum during an acute phase of dementia præcox, he was subjected to some researches of metabolism. After having shown symptoms of acute sensorial delirium, paresthesias, negativism, dermatographia, hyperthermia, etc., he gradually deteriorated and demented.² A year afterwards his appearance was more orderly, but deterioration was marked. As his family required him, he was discharged. But, some months after, he again showed acute symptoms of motor agitation accompanied by hallucinations and suicidal tendencies, and he was again received at the asylum. He entered the 3d of January, and appeared very confused, in a state of hallucinatory stupor in which he remained nearly a week. Gradually, he became calm, and was quiet during the three months, showing still a very tardy perception—every affection and sentiment perfectly extinguished. At the end of April, he developed another acute phase of motor agitation, accompanied by hallucinatory delirium, stupor and sitophobia. He was nourished artificially and kept in bed. His temperature varied between 37-38° C., 37.5° C., never attaining 38°. These symptoms were already improving and the patient began to take food voluntarily, when, on May 3, the study of

²The organic metabolism in dementia præcox, Note II, Observ. I, Archives of Neurology and Psychiatry, Vol. IV, 1909.

metabolism was begun. During ten days, from the 5th to the 14th, feces and urine were collected uninterruptedly, and through all this period the patient steadily improved. During the first five days (5th to 9th) he was more agitated, and on this account in Table V we have separated the analytical results of these days from those following, during which he was quiet.

At the end of the experiment, the patient left his bed, and began to lead the ward life with his comrades, resuming his usual attitude of half stupor and of intellectual torpor. As his relatives wished to have him home, he was dismissed again, and now is cared for at home. Subsequent information shows that he remains at home quietly, but is confused and needs constant attention. During the experiment the temperature was always normal.

FIRST PERIOD.

May 5	Morning, 36.4	Evening, 36.9
" 6	" 35.9	" 36.4
" 7	" 36.6	" 36.5
" 8	" 36.6	" 36.5
" 9	" 36.5	" 36.6

SECOND PERIOD.

May 10	Morning, 35.8	Evening, 36.4
" 11	" 36	" 36.7
" 12	" 36.1	" 36.4
" 13	" 35.9	" 36.4
" 14	" 36	" 36.2

Milk composition, as in Case 3.

		Morning °C.	Evening °C.	Weight Kg.
March	3	36.7	36.7	54,000
"	4	36.4	36.5	
"	5	36.9	37	Pulse 80-95
"	6	36.3	36.7	
"	7	36.1	36.5	
"	8	36.2	36.5	
"	9	36.4	36.4	
"	11	36.4	36.5	
"	12	36.3	36.8	
"	13	36.4	36.6	
"	14	36.5	36.5	
				53,200

After the experiment the patient continued to get better; he became calmer and more orderly in his manner, and no longer showed evidence of hallucinations and acute exacerbations. Intelligence, after the crisis, was rather diminished, and so it is at the present time after almost a year of illness. Now, the patient is apathetic, shows no affection for his family, and is without aspirations. He has abandoned his profession, and occasionally shows some idea of persecution, and is very changeable in emotional tone—some days meek and gay, intractable and gloomy others.

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SECOND PERIOD.

May 10	Morning, 35.8	Evening, 36.4
" 11	" 36	" 36.7
" 12	" 36.1	" 36.4
" 13	" 35.9	" 36.4
" 14	" 36	" 36.2

Milk composition, as in Case 3.

TABLE I.

No. 1 Name, Malag. Giosuè. { Weight, April 8.....64.500 kg.
17.....63.900 " }
Loss..... 600 g.

30 Calories, and 0.24 g. N. pro kg.

Date, IV. 08.	Food.		Urine.										Ratios.						Faeces.		Total N.		Total P.		Balance.							
	N.	P.	Water.	Vol.	Sp. gr.	N.	Urea.	P.	S.	Inorg. H ₂ SO ₄ .	Ethereal H ₂ SO ₄ .	Acid S.	Neutral S.	100 N :			100 S :			N.	P.	Total N.	Total P.	N.	P.							
														Uretic N.	P.	S.	Inorg. S.	Ethereal S.	Neutral S.													
g.	g.	c.cm.	c.cm.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.
8	13.067	1.555	1140	840	1020	11.366	23.51	1.280	1.1936	2.2809	0.0571	0.7478	0.3020	93.3	8.80	10.35	63.93	1.64	34.40	1.898	0.29	13.164	1.570	-0.097	-0.014							
9	15.035	1.754	1000	815	1025	12.803	26.55	1.026	1.1700	2.7158	0.0942	0.9185	0.2515	95.1	7.96	9.08	75.89	2.43	21.48	"	"	14.791	1.316	+0.244	+0.448							
10	19.097	1.806	2400	805	1023	15.286	28.43	1.082	1.1527	2.7433	0.1157	0.9357	0.2170	89.7	7.08	7.37	77.81	3.36	18.83	"	"	17.186	1.372	+1.911	+0.434							
11	15.223	1.665	1800	1230	1024	17.682	29.06	1.316	1.1130	2.7322	0.0948	0.9220	0.1900	76.7	7.45	6.29	80.14	2.78	17.08	"	"	19.500	1.606	-4.337	+0.089							
12	15.392	1.606	1800	1155	1024	13.744	28.00	1.258	1.2400	2.7014	0.0897	0.9122	0.2678	95.0	9.15	9.02	71.20	2.37	26.43	"	"	15.642	1.548	-0.350	+0.138							
13	14.794	1.611	1760	1000	1021	12.710	26.27	1.291	1.0270	2.6242	0.0918	0.9024	0.1246	97.0	10.40	8.08	84.95	2.92	12.13	"	"	14.908	1.581	+0.196	+0.030							
14	13.805	1.540	1550	1274	1016	12.128	23.21	1.733	1.0260	2.4980	0.0900	0.8458	0.1802	89.3	14.28	8.46	79.61	2.85	17.53	"	"	14.026	2.023	-0.201	-0.453							
15	16.943	1.884	1800	1140	1016	13.290	24.12	1.524	1.0940	2.5384	0.0896	0.8500	0.2550	85.5	13.99	8.29	75.85	2.68	21.47	"	"	15.698	2.124	+1.845	-0.240							
16	14.211	1.657	2000	1400	1014	13.944	25.45	1.360	1.1020	2.5945	0.0875	0.9748	0.1280	86.8	9.76	7.91	85.85	2.89	11.55	"	"	16.842	1.640	-1.631	+0.027							
17	16.993	1.779	2000	1600	1014	14.770	28.41	1.349	1.0960	2.7543	0.0857	0.8880	0.2110	90.1	9.10	7.44	78.98	2.55	18.47	"	"	15.668	1.629	+0.295	+0.014							
8-17 Aver- age.	15.443	1.70	1740	1135	1019	14.760	26.30	1.353	1.1163	2.6431	0.0909	0.9007	0.2257	89.6	9.16	7.55	77.4	2.64	19.95	1.598	0.29	15.653	1.643	-0.215	+0.057							

TABLE IV.

No. 4. Name, Ros. Alfred. { Weight, March 13, 54.000 kg.
 " " " 12, 53.300 " }
 Loss 900 g.
 27 Calories, and 0.205 g. N. pro kg.

Date. III. 00.	Food.		Urine.										Ratios.				Faeces.		Total N.		Total P.		Balance.					
	N.	P.	Water.	Vol.	Sp. gr.	N.	Urea.	P.	S.	Inorg. H ₂ SO ₄ .	Etheral H ₂ SO ₄ .	Acid S.	Neutral S.	100 N :		100 S :		N.	P.	g.	g.	g.	g.	g.	g.	g.	g.	g.
														P.	S.	P.	S.												Uretic N.	g.	Inorg. S.	Etheral S.	Neutral S.
3	10.423	1.048	1256	1040	1015	13.187	26.43	0.605	0.938	....	0.1530	....	....	93.7	4.59	7.11	....	5.09	....	0.648	0.209	13.735	0.814	-3.312	+0.234
4	9.807	0.967	1340	960	1016	12.608	23.88	0.814	3.040	1.9677	0.1533	0.703	2.3367	88.4	5.13	24.11	21.6	1.55	76.85	"	"	13.156	1.023	-3.249	-0.056			
5	10.666	1.088	1330	1165	1018	16.799	32.03	2.063	1.886	2.9662	0.2978	1.064	0.382	88.9	12.40	8.25	70.14	5.91	23.95	"	"	17.347	2.362	-6.781	-1.324			
6	9.886	0.975	1380	685	1021	10.740	30.86	0.620	0.858	1.5637	0.1863	0.637	0.721	90.5	5.77	7.99	67.25	6.99	25.76	"	"	11.288	0.859	-1.402	+0.146			
7	10.688	1.085	1120	1104	1021	17.244	33.50	2.033	2.667	2.9710	0.2840	1.094	1.603	90.6	11.78	15.38	36.41	3.49	90.10	"	"	17.792	2.241	-7.104	-1.156			
8	10.815	1.001	1240	840	1021	12.835	25.30	0.696	2.956	1.9903	0.2157	0.721	2.235	91.6	5.42	23.08	22.16	1.05	75.89	"	"	13.383	0.905	-2.568	+0.068			
9	10.728	1.091	1190	1125	1021	14.501	29.36	0.965	1.106	2.6910	0.3000	0.948	0.188	94.4	6.65	7.62	78.82	7.40	14.28	"	"	15.049	1.174	-4.311	-0.083			
10	10.928	1.115	1080	1080	1016	13.961	27.48	0.597	1.771	2.3523	0.2437	0.848	0.923	91.5	4.80	13.66	43.40	4.49	52.11	"	"	15.509	0.806	-3.561	+0.309			
11	13.507	1.450	1290	905	1022	14.896	30.58	0.757	1.277	2.9290	0.2520	1.037	0.240	95.8	5.28	6.81	74.71	6.49	18.80	"	"	15.444	0.966	-1.937	+0.424			
12	13.345	1.510	1115	960	1023	15.029	29.35	0.969	1.190	2.9351	0.2539	1.038	0.152	90.9	6.44	7.92	80.75	6.98	12.77	"	"	15.577	1.178	-2.232	+0.337			
8-12 Aver- age.	11.07	1.128	1230	964	1019	14.179	27.57	1.017	1.719	2.3963	0.2312	0.895	0.91	91.6	7.17	12.39	42.7	4.4	82.9	0.548	0.209	14.727	1.226	-3.657	-0.098			

TABLE V.

No. 5. Name, Pater. Irmo. { Weight, May 8, 61.300 kg.
 " " " 14, 60.600 " }
 Loss 600 g.

36 Calories, and 0.303 g. N. pro kg.

Date, V. 00.	Food.			Urine.										Ratios.				Faeces.		Total N.		Total P.		Balance.	
	N.	P.	Water.	Vol.	Sp. gr.	N.	Urea.	P.	S.	Inorg. H ₂ SO ₄ .	Ethereal H ₂ SO ₄ .	Acid S.	Neutral S.	100 N :		100 S :		N.	P.	Total N.	Total P.	N.	P.		
	g.	g.	c.cm.	c.cm.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.	g.
6	9.234	0.941	1560	960	1011	8.987	15.08	1.064	1.4170	1.7812	0.0008	0.0363	0.7807	11.53	15.76	43.30	1.40	65.30	0.672	0.074	9.650	1.138	0.	0.	-0.197
6	11.969	1.165	1600	1220	1018	13.100	26.74	1.610	1.2750	2.4396	0.0064	0.0429	0.4321	12.29	9.73	63.68	2.43	33.59	"	"	13.772	1.684	"	"	-0.529
7	12.845	1.274	1660	1396	1014	15.960	....	1.101	1.3186	2.4396	0.0014	0.0383	0.4922	6.91	8.36	60.41	2.27	37.32	"	"	16.622	1.176	"	"	+0.000
8	13.136	1.313	1550	1000	1014	11.800	22.14	1.566	1.2565	2.2326	0.0014	0.7564	0.5021	13.53	10.67	57.99	2.11	39.90	"	"	12.472	1.670	"	"	-0.357
9	13.027	1.299	1510	1219	1016	14.870	30.16	1.306	1.1198	2.7060	0.1170	0.0500	0.2058	8.11	7.98	78.93	3.30	17.77	"	"	15.542	1.280	"	"	+0.019
5-9 Aver.	12.04	1.195	1560	1131	1015	12.941	23.53	1.315	1.2776	2.3466	0.0092	0.303	0.4926	10.53	10.53	60.87	2.3	36.83	0.672	0.074	13.613	1.30	-1.573	-0.194	
10	13.200	1.323	1365	1208	1019	14.860	29.48	1.568	0.9998	2.7700	0.1040	0.0306	0.0092	10.64	6.71	90.58	3.40	6.02	0.672	0.074	15.562	1.659	-2.363	-0.336	
11	12.575	1.238	1415	1100	1014	13.420	26.00	0.715	0.9551	2.5550	0.0030	0.0551	0.1000	5.33	7.19	86.44	3.15	10.41	"	"	14.092	0.779	-1.517	+0.449	
12	12.571	1.237	1365	870	1016	10.690	19.97	0.687	0.7025	2.0553	0.0067	0.0636	0.0300	6.43	6.87	91.20	3.24	5.68	"	"	11.392	0.761	+1.209	+0.476	
13	12.860	1.303	1400	980	1016	12.440	23.72	1.264	0.9420	2.4410	0.1000	0.0300	0.1000	10.16	7.57	84.65	3.78	11.57	"	"	13.112	1.338	-0.243	-0.005	
14	12.923	1.272	1405	1128	1015	13.670	24.72	1.373	0.9658	2.5000	0.0090	0.0405	0.0963	10.04	6.94	86.13	3.41	10.46	"	"	14.342	1.447	-1.519	-0.175	
10-14 Aver.	12.51	1.275	1390	1056	1016	13.02	24.5	1.125	0.9116	2.3805	0.005	0.33	0.0315	8.52	7.	87.61	3.30	9.	0.672	0.074	13.7	1.199	-0.89	+0.076	

SUMMARY AND DISCUSSION OF RESULTS.

1. Dementia præcox in chronic phase: In the first two cases of dementia præcox—(Nos. 2-3, Tables II-III), belonging to a phase well advanced dementia, we meet the greater number of concordant data, only those relating to the metabolism of sulphur being at variance. We shall see the most probable cause of this difference:

Nitrogen.—Above all, it is to be noted that the balance of the nitrogen is not in equilibrium; a retention of nitrogen is noticeable in both cases, or, at least, an elimination in urine and feces less than the intake. In Case No. 2, there is a retention of 1.041 g. pro die, on an average; in Case No. 3 of 0.385 g. At the same time, however, an increase of weight was not found in the two patients—and Case No. 2 in the first ten days lost 500 g. Urea was eliminated in absolute and relative quantities that were about normal (88.9%-90.8% of urea).

Phosphorus.—The percentage of phosphorus is well in accord with that of the nitrogen; therefore, a retention is noted also here, though less marked. This is made evident by the *N/P* ratios of the urine, which are nearly normal—9.7-10.7, and by the relative amounts of these two elements in the food compared with the total quantity eliminated in the urine and feces. In fact, we have:

In Case No. 2: *N/P* of food = 10.

N/P total eliminated 10.5.

In Case No. 3: *N/P* in the food 10.5.

N/P total eliminated 10.5.

Sulphur.—A marked difference is noted in the two cases. While in Case No. 3 the ratio *N/S* may be considered a normal one, as also the elimination of conjugated sulphuric acid and of neutral sulphur, in Case No. 2 we have an exaggerated elimination of *S* relatively to *N* (12.0%), and accentuated production of ethereal sulphur, and a very accentuated increase of neutral sulphur—46%.

In this last report, we were really surprised, and remained a little perplexed, because it was contrary to results which we had found in all former work in our laboratory respecting sulphur balance in advanced and chronic states of dementia præcox. In fact, an exaggerated increase of neutral sulphur in the urine, we

only observed in acute and initial periods of disease. Thus, it was a matter of great satisfaction for us to be able to find the reason of this unusual variation, when after about a month we perceived in the patient the certain signs of a pulmonary tuberculosis, which infection proved fatal, and the diagnosis was verified at the autopsy.

Pulmonary tuberculosis, in fact, especially at the beginning, is enough in itself to cause the exaggerated elimination of neutral sulphur in the urine, and to increase the *N* ration. These two facts have been noted earlier by Reale and Velardi,³ who found in incipient pulmonary tuberculosis an increase in total *S* in the urine with a percentage of 42.29 of neutral *S*; and in advanced pulmonary tuberculosis 46% of neutral *S*. In our case we find 46.7% and a ratio *N/S* of 12.9. This is a great deal higher than the normal, which may be obtained with our diet, *i. e.*, about 7. In Case No. 2 then, we believe we may attribute this variation in sulphur excretion as due to the phthisis and not to the psychosis.

2. Dementia præcox in an acute phase. *Nitrogen*. In the two other cases of dementia præcox (Nos. 4 and 5—Tables IV, V) studied during an acute exacerbation of the disease, when this may be considered as an initial state, we find a very different type of metabolism; while in the first two cases we find retention (?) of nitrogen, we find here an excessive elimination. There occurred a very considerable daily loss of nitrogen in Case No. 4, 3.657 gm. pro die, a marked loss the first period in Case No. 5, 1.573 gm. pro die, less marked in the second, 0.89 gm. Urea in both cases was eliminated in a considerable quantity for the diet, but in a just proportion to the total nitrogen of urine: urea nitrogen, in fact, is represented by the normal figure, 91.6, 88.9, 89.2.

Phosphorus.—The balance of phosphorus is also decreased, but in a lesser degree than the nitrogen. In Case No. 4 we find a daily loss of 0.098 gm.; in No. 5, 1st period of 0.194 gm., 2nd period 0.076. This loss, however, does not remain quite proportional to the nitrogen one, the *N* of urine being a little lower than the *P* in reference to the normal ratios. Case 5 is an exception:

³ Reale e Velardi—Sull' eliminazione dello solfo neutro per le orine, ref. Boas Arch. 2-141, 1896.

E. Reale—Manuale de chimica clinica, 1907, p. 442.

1st period in which P is 10.53% of N . That the N/P ratio is not within normal limits is seen where we compare these ratios as found in the initial outgo. The following figures are found:

No. 4—Food $N/P=10.2$

Urine and feces $N/P=8.3$

No. 5—Food $N/P=9.9$

Urine and feces $N/P=\begin{cases} \text{1st period } 10 \\ \text{2nd period } 8.7 \end{cases}$

Phosphorus in the feces is very low in amount, especially in Case No. 5.

Sulphur.—The balance of the sulphur metabolism affords a most interesting element of study in these cases. No disease other than this mental alteration being demonstrated in these patients, the anomalies of sulphur metabolism may be attributed in all probability to the mental disease itself. Then, also, it is noted that in the most acute phase—that is to say in all ten days of Case No. 4, and in the first five days of Case No. 5, there was a considerable increase of sulphur in the urine, both absolutely and relatively to the total nitrogen. We find for the N/S ratio the figures 12.39 and 10.5, while in the second period of Case No. 5 the same ratio remained within physiological limits (7); and, further, a point which makes our results the more interesting is the exaggerated elimination of the non-oxidized sulphur in the first two periods. From this it appears evident that the increased elimination of sulphur relative to the nitrogen, and of neutral sulphur relative to oxidized sulphur characterizes the metabolism of the most acute periods of our patients.

In regard to the ethereal sulphates, is only to be noted the slight increase observed in Case 4.

From the observations above given we can draw the conclusion that in dementia præcox, both in its acute periods and in its chronic phases of dementia, metabolic functions are carried on in an abnormal manner. Rather noteworthy and characteristic in these two cases is the nitrogen retention, which one of us has always noted in the other eight cases of dementia præcox examined.

Can we really speak of retention? This would be a plausible explanation if in our patients and in those in whom the same

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phenomena have been observed, there was an increase in weight coincidently; but this has not been the case. The explanation of the fact remains still uncertain. In the two acute cases which we here present, we see the same alterations which have been observed in the other four cases studied previously: that is to say—an excessive elimination of nitrogen, phosphorus and sulphur, and an excessive percentage of neutral sulphur; coincidently there was always observed in these patients a diminution of the body weight. To these alterations of the metabolism in the acute phase of illness, we believe we may give a certain importance, and do not consider them as casual results, or as only variations independent of the mental disease. As in these patients the mental disorder is unaccompanied by evidences of other physical disease, the metabolic alterations as found in these studies must be looked upon as due to the mental disease itself. These alterations seem to characterize this special period of the disease. We believe that we may take into a certain consideration now the type of balance that we have constantly observed in six cases of dementia præcox during a period of acute exacerbation of the illness in connection with the excessive elimination of nitrogen, phosphorus and sulphur, and particularly the increased relative amounts of the unoxidized form. These observations taken together intimate the existence of a protein katabolism in the organism during the period in question, and the constant loss of weight sustained that hypothesis; while on the other hand the increase of the unoxidized sulphur must indicate a want in the oxidative process or an intense poisoning of the organism. Human and experimental pathology has long since demonstrated a direct relation between the abnormal elimination of neutral sulphur and the process of intoxication or of deficient cellular oxidation. Thus, we know of the high percentages of neutral sulphur, which are found in diabetes (Reale and Velardi), in pernicious anemia (R. Schmidt), in the anemia of anchylostomiasis (Schupfer a De Rossi), in fasting, (F. Mueller, Harnack and Kleine, Freund), in experimental poisoning by phosphorus, (Kast a Münzer), cyanide, (R. G. Wallace), chloroform (Savelieff, Rudenko, Benedikt), and chloral (Harnack and Remertz); in the experimental autopoisoning by thyroidectomy (Ducceschi), etc. We do not know really to which poison to attribute the phenomena of protein katabolism, and of

exaggerated neutral sulphur found in our experiments; nor to which textures of the body belonged the *N*, *P* and *S* excessively eliminated. We limit ourselves now to verifying the fact, and to point out the necessity of continuing in this kind of research, in order to clear up some points in the etiology of this disease. From what we have explained, it seems that we do not take part in the skepticism of Folin and Barnes, concerning the results that may be derived from researches in the metabolism of mental disease, in general, and dementia præcox in particular. Folin,* in the long series of accurate observations that he has made, arrived at the conclusion that, excepting perhaps the cases of progressive paralysis, wherein some disorder of metabolism is often noted, although sometimes variations from the normal are found, these are not characteristic of any one psychoses or group. Yet, it is still to be noted, we may still observe that, in so far as dementia præcox is concerned, Folin kept no account of the clinical stages of the illness, but examined some patients in the acute initial phase of the disease, when alterations are more often found. Not having calculated minutely the balance of nitrogen and phosphorus, Folin cannot give an accurate value to the deficient elimination in the urine and feces of these two elements, which we have found disturbed in the advanced phases of the disease. Also, Barnes,† in a recent study of the metabolism in two cases of dementia præcox, presenting acute phases alternating with phases of relative tranquillity, arrives at the conclusion that with the methods used one cannot decide whether or not, in the cases in question, there exists phenomena of auto-intoxication. But, not having exactly calculated the quantity of introduced nitrogen, one cannot value the balance of nitrogen. In Case 1, followed more completely, there were periods of exaggerated elimination of *N* (13.5 gm.) in the urine, on an average, pro die in a period of fasting, 18 gm. In the 2nd period with nourishment of eggs and milk, also the ratio *S/N* is found increased, and the quantity of neutral sulphur eliminated very exaggerated in certain

* Folin and Ph. Shaffer—Some metabolism studies, with special reference to mental disorders. *American Journal of Insanity*, LX-LXI, 1907.

† Barnes—A study of the metabolism of two atypical cases related to the dementia præcox group. *The American Journal of Insanity*, LXV, No. 4, 1909.

periods (3rd period on the starch and cream diet, 40.06%, on an average pro die). From this study of Barnes then should result data which quite accord with ours.

We do not presume, at any rate, to give from our researches any definite conclusion; we wish to continue further the series of our observations, and to extend our study to include other important constituents of the urine of the undetermined *N*, to which Folin has justly directed attention in many of his cases.

A STUDY OF ASSOCIATION IN INSANITY.

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PART II. ASSOCIATION IN INSANE SUBJECTS.

§ I. GENERAL SURVEY OF PATHOLOGICAL MATERIAL.

The pathological material which forms the basis of the present part of our study consists mainly of two hundred and forty-seven test records obtained for the most part from patients at the Kings Park State Hospital.

The different groups from which the cases were selected, together with the number from each group, are shown in Table I.

TABLE I.

Dementia præcox	108 cases.
Paranoic conditions	33 "
Epilepsy	24 "
General paresis	32 "
Manic-depressive insanity	32 "
Involitional melancholia	8 "
Alcoholic psychoses	6 "
Senile dementia	4 "

A comparison of our pathological with our normal material *en masse* reveals in the former evidence of a weakening of the normal tendency to respond by common reactions. This is shown in Table II.

TABLE II.

	Common reactions.	Doubtful reactions.	Individual reactions.
1,000 normal subjects	91.7%	1.5%	6.8%
247 insane subjects	70.7%	2.5%	26.8%

It seems evident from this that pathological significance attaches mainly to individual reactions, so that our study resolves itself largely into (1) an analysis and classification of individual reactions and (2) an attempt to determine what relationship, if any, exists between the different types of reactions and the different clinical forms of mental disease.

§ 2. CLASSIFICATION OF REACTIONS.

Those who have attempted to use the association test in the study of insanity have felt the need of a practical classification of reactions, and have at the same time encountered the difficulty of establishing definite criteria for distinguishing the different groups from one another. It is a comparatively simple matter to make these distinctions in a general way and even to formulate a more or less comprehensive theoretical classification, but there still remains much difficulty in practice. We have made repeated attempts to utilize various systems of classification which involve free play of personal equation in their application. Although for us the matter is greatly simplified by the elimination of all the common reactions with the aid of the frequency tables, we have nevertheless met with no success. The distinctions made by either of us have on no occasion fully satisfied, at the second reading, either the one who made them or the other, while a comparison of the distinctions made by each of us independently has shown a disagreement to the extent of 20—35 per cent.

We sought, therefore, to formulate a classification in which the various groups should be so defined as to obviate the interference of personal equation in the work of applying it, hoping thus to achieve greater accuracy. In this we can lay claim to only partial success; for, in the first place, having satisfactorily defined a number of groups, we found it necessary in the end to provide a special group for unclassified reactions, into which falls more than one-third of the total number of individual reactions; and, in the second place, in at least two of our groups the play of personal equation has not been entirely eliminated, so that there is still a possibility of error to the extent of five per cent of individual reactions, which means approximately one per cent of the total number of reactions. We have found, however, that in spite of these shortcomings the classification here proposed is more serviceable than others which, though more comprehensive, are at the same time lacking in definiteness.

Our classification consists of the following classes, groups and subdivisions:

- I. *Common reactions.*
 1. Specific reactions.
 2. Non-specific reactions.
- II. *Doubtful reactions.*
- III. *Individual reactions.*
 1. Normal reactions.
 2. Pathological reactions:
 - A. Derivatives of stimulus words.
 - B. Partial dissociation:
 - (a) Non-specific reactions.
 - (b) Sound reactions:
 - α. Words.
 - β. Neologisms.
 - (c) Word complements.
 - (d) Particles of speech.
 - C. Complete dissociation:
 - (a) Perseveration:
 - α. Association to preceding stimulus.
 - β. Association to preceding reaction.
 - γ. Repetition of preceding stimulus.
 - δ. Repetition of previous stimulus.
 - ε. Repetition of preceding reaction.
 - ζ. Repetition of previous reaction.
 - η. Reaction repeated five times (stereotypy).
 - (b) Neologisms without sound relation.
 3. Unclassified.

§ 3. NON-SPECIFIC REACTIONS; DOUBTFUL REACTIONS.

Non-specific Reactions.—It has already been intimated that common reactions are in the vast majority of instances to be regarded as normal. From amongst them, however, a fairly definite group can be separated out which seems to possess some pathological significance, namely, the group which we have termed non-specific.

In this group are placed words which are so widely applicable as to serve as more or less appropriate reactions to almost any of our stimulus words. That such reactions are in value inferior to the remaining group of common reactions, which we have termed, in contradistinction, *specific reactions*, is perhaps sufficiently obvious; we shall speak later, however, of their occurrence in both normal and insane cases.

It is not always easy to judge whether or not a given reaction should be classed as non-specific. A study of our material made with special reference to this type of reactions has enabled us to select the following list of words, any of which, occurring in response to any stimulus word, is classed as a non-specific reaction:

article, articles
 bad
 beautiful, beauty
 fine
 good, goodness
 great
 happiness, happy
 large
 man
 necessary, necessity
 nice
 object (noun)
 people
 person
 pleasant, pleasantness, pleasing, pleasure
 pretty
 small
 thinking, thought, thoughts
 unnecessary
 unpleasant
 use, used, useful, usefulness, useless, uselessness, uses, using
 woman
 work

It should be mentioned that some of these words occur as reactions to one or several stimulus words with such frequency (*citizen—man*, value 27.8 per cent; *health—good*, value 9.4 per cent) as to acquire in such instances a value as high as that of strictly specific reactions.

Doubtful Reactions have already been defined (p. 40): any reaction word which is not found in the table in its identical form, but which is a grammatical variant or derivative of a word found there, is placed in this group.

§ 4. INDIVIDUAL REACTIONS; EXPLANATION OF GROUPS AND METHODS OF APPLICATION.

Normal Reactions.—Inasmuch as the frequency tables do not exhaust all normal possibilities of reaction, a certain number of reactions which are essentially normal are to be found among the individual reactions. In order to separate these from the pathological reactions, we have compiled an appendix to the frequency tables, consisting mainly of specific definitions of groups of words to be included under each stimulus word in our list. This appendix will be found at the end of this paper.

A word of explanation is perhaps due as to the manner in which the appendix has been compiled. It was developed in a purely empirical way, the basis being such individual reactions, given by both normal and insane subjects, as seemed in our judgment to be obviously normal.

It must be acknowledged that the appendix falls short of all that might be desired. In the first place, its use involves to some slight extent the play of personal equation, and it therefore constitutes a source of error; in the second place, it is in some respects too inclusive while in other respects it is not sufficiently so. However, the error due to personal equation is slight; the inclusion of certain "far-fetched" or even frankly pathological reactions may be discounted by bearing in mind that the general value of this group is not equal to that of the group of common reactions; and the number of strictly normal reactions which are not included is after all small. Our experience has shown us that the appendix constitutes an important aid in the analysis of individual reactions.

Pathological Reactions. Derivatives of Stimulus Words.—We place here any reaction which is a grammatical variant or derivative of a stimulus word. The tendency to give such reactions seems to be dependent upon a suspension or inhibition of the normal process by which the stimulus word excites the production of a new concept, for we have here not a production of a new concept but a mere change in the form of the stimulus word. As examples of such reactions may be mentioned: *eating*—*eatables*, *short*—*shortness*, *sweet*—*sweetened*, *quiet*—*quietness*.

Partial Dissociation.—We have employed the term dissociation to indicate a rupture of that bond—whatever be its nature—

which may be supposed to exist normally between stimulus and reaction and which causes normal persons to respond in the majority of instances by common reactions. And we speak of partial dissociation where there is still an obvious, though weak and superficial, connection. Under this heading we can differentiate four types:

Non-specific Reactions have already been defined; we distinguish those in this class from those in the class of common reactions by means of the frequency tables.

Sound Reactions.—This type requires no explanation; the main difficulty is to decide what degree of sound similarity between stimulus and reaction should be deemed sufficient for placing a reaction under this heading. The total number of different sounds used in language articulation is, of course, small, so that any two words are liable to present considerable chance similarity. Some time ago we estimated the average degree of sound similarity between stimulus words and reaction words in a series of one hundred test records obtained from normal persons; we found that on the average 14.53 per cent of the sounds of the stimulus words were reproduced, in the same order, in the reaction word. Our experience finally led us to adopt the following general rule: A reaction is to be placed under this heading when fifty per cent of the sounds of the shorter word of the pair are identical with sounds of the longer word and are ranged in the same order.

Among sound reactions we occasionally find **neologisms**; for these a separate heading is provided. Possibly their occurrence may be taken as an indication of an exaggerated tendency to respond by sound reactions.

Word Complements.—Here we include any reaction which, added to the stimulus word, forms a word, a proper name, or a compound word in common use.

Particles of Speech.—Under this heading we include articles, numerals, pronouns, auxiliary verbs, adverbs of time, place and degree, conjunctions, prepositions, and interjections.

Complete Dissociation.—Here are included reactions which appear to be entirely unrelated to the corresponding stimulus words; in the case of such reactions the stimulus words seem to act, as Aschaffenburg has pointed out, merely as signals for discharge. This subdivision contains several types of reactions which seem to be dependent upon the phenomenon of perseveration; it contains also the rather important type of neologisms.

This is illustrated by the

Neologisms might be divided into three types
those which arise from ignorance of language
comfort, short, diminutive, mountain—floor

Mountain—floor is an individual reaction; *table—floor* is found in the frequency tables; *floor* is, therefore, classed as an association to preceding reaction.

beautiful—flowers
window—red

Window—red is an individual reaction; *red—flowers* is found in the frequency tables; therefore, *red* is classed as an association to preceding reaction.

In cases in which neither the reaction in question nor the preceding reaction happens to be one of our stimulus words, but relationship between them may be judged to exist without considerable doubt, the reaction in question is also classed here.
Example:

priest—father
ocean—mother

Ocean—mother is an individual reaction; neither the word *father* nor the word *mother* is among our stimulus words; but the association between the words *father* and *mother* may be judged to exist without considerable doubt; therefore, in this case *mother* is classed as an association to preceding reaction.

In such cases as this personal equation must necessarily come into play; comparative uniformity of judgment may, however, be attained by systematically excluding any reaction the relationship of which to the preceding reaction is subject to any considerable doubt and by placing any such reaction in the unclassified group.

Repetition of Previous Stimulus.—Here we place any reaction which is a repetition of any previous stimulus from amongst the ten next preceding, at the same time placing **repetition of preceding stimulus** under a separate heading.

Neologisms.—Here we place the newly coined words, so commonly given by the insane, excepting such as possess a sound relationship to the stimulus word, for which, as already stated, a special place in the classification has been provided.

an association to preceding reaction. This is illustrated by the following examples:

eating—table
mountain—floor

Mountain—floor is an individual reaction; *table—floor* is found in the frequency tables; *floor* is, therefore, classed as an association to preceding reaction.

beautiful—flowers
window—red

Window—red is an individual reaction; *red—flowers* is found in the frequency tables; therefore, *red* is classed as an association to preceding reaction.

In cases in which neither the reaction in question nor the preceding reaction happens to be one of our stimulus words, but a relationship between them may be judged to exist without considerable doubt, the reaction in question is also classed here. Example:

priest—father
ocean—mother

Ocean—mother is an individual reaction; neither the word *father* nor the word *mother* is among our stimulus words; but the association between the words *father* and *mother* may be judged to exist without considerable doubt; therefore, in this case *mother* is classed as an association to preceding reaction.

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Repetition of Previous Stimulus.—Here we place any reaction which is a repetition of any previous stimulus from amongst the ten next preceding, at the same time placing **repetition of preceding stimulus** under a separate heading.

Neologisms.—Here we place the newly coined words, so commonly given by the insane, excepting such as possess a sound relationship to the stimulus word, for which, as already stated, a special place in the classification has been provided.

Neologisms might be divided into three types, as follows: (1) those which arise from ignorance of language (*comfort—uncomfort, short—diminiature*); (2) distortions of actual words, apparently of pathological origin and not due to ignorance (*hungry—foodation, thief—dissteal*); and (3) those which seem to be without any meaning whatever (*scack, gehimper, hanrow, dicut*). It is, however, impossible to draw clear-cut distinctions between these types, and for this reason we have made no provision in our classification for such division.

Unclassified Reactions.—This group is important, in the first place, because it is numerically a large one, and in the second place, because it contains certain fairly definite types of reactions which are placed here for the sole reason that we have not been able to find strictly objective criteria for their differentiation from other types.

It has already been stated that the frequency tables, even together with the appendix, fail to exhaust all normal possibilities of association, so that a certain small number of perfectly normal reactions must fall into the unclassified group. We submit the following examples:

music—listen
smooth—suave
sour—curdled
earth—mound

Another type of reactions found in the unclassified group, though also normal, yet not obviously so until explained by the subject, is represented by those which originate from purely personal experiences, such as the following, given by normal subjects:

blossom—T
hammer—J

The first of these reactions is explained by the subject's acquaintance with a young lady, Miss T, who has been nicknamed "Blossom," and the second is explained by the subject's having among her pupils at school a boy by the name of J Hammer.

It would be difficult to estimate the proportion of such reactions in the unclassified group, but we have gained the general

impression that it is small. An attempt to place them in a separate group could be made only with the aid of explanations from the subjects; such aid in the case of insane subjects is generally unreliable. Moreover, to class these reactions as strictly normal would perhaps be going too far, since their general value is obviously inferior to that of the common reactions; and in any case in which they are given in unusually large numbers they must be regarded as manifestation of a tendency to depart from the normal to the extent to which they displace common reactions.

The next type of reactions met with in the unclassified group is characterized by a peculiarly superficial, or non-essential, or purely *circumstantial* relationship to the stimulus. Such reactions, though occasionally given by normal subjects, are more often given by insane ones, and seem to be somewhat characteristic of states of mental deterioration which are clinically rather loosely described as puerilism. We offer the following examples, given by normal subjects:

music—town
sickness—summer
child—unknown
house—enter

Still another type of reactions to be considered in this connection consists of words which are in no way related to the corresponding stimulus words, but which arise from *distraction* of the subject by surrounding objects, sounds, and the like. In some cases the experimenter may be able to judge from the direction of the subject's gaze, from a listening attitude, and so on, that certain reactions are due to distraction. In other cases, particularly in cases of normal subjects, the fact that certain reactions are due to distraction may be determined by questioning the subject on this point immediately after making the test. In work with insane subjects, as we have several times had occasion to point out, such aid is generally not available.

The group of unclassified reactions includes also one more type of reactions which are of great importance both numerically and otherwise. These are the **incoherent reactions**, that is to say, reactions which are determined neither by the stimulus words, nor by the agency of perseveration, nor by distraction.

Although the occurrence of incoherent reactions is hardly subject to doubt, yet in no instance is it possible to establish with certainty that a given reaction is of this type, for in no instance can a remote, or an imagined, or a merely symbolic relationship between stimulus and reaction be positively excluded. Some, indeed, would assert that some such relationship must necessarily exist in every instance, at least in the domain of the subconscious. This circumstance necessitates the placing of this type of reactions in the unclassified group.

In practice it may be found advisable in some cases to analyze the unclassified reactions with a view to ascertaining to what extent each of the various types is represented among them. But one here treads on slippery ground, and one must be continually warned against the danger of erroneous conclusions.

§ 5. ORDER OF PREFERENCE.

After having developed the classification here proposed we found that there was still considerable room for difference of opinion in the placing of many reactions, owing to the circumstance that in many cases a reaction presents features which render it assignable under any one of two or more headings. To leave the matter of preference in grouping to be decided in each case according to the best judgment of the experimenter would mean introducing again the play of personal equation, and would thus court failure of all our efforts to accomplish a standardization of the association test. Therefore, the necessity of establishing a proper order of preference for guidance in the application of the classification became to us quite apparent.

In the arrangement of the order of preference we were guided mainly by two principles, namely: (1) as between two groups of unequal definition, the one which is more clearly defined and which, therefore, leaves less play for personal equation is to be preferred; (2) as between two groups of equal definition, the one which possesses the greater pathological significance is to be preferred. In accordance with these principles we have adopted the order of preference shown in Table III., placing every reaction under the highest heading on the list under which it may be properly classed.

TABLE III.

1. Non-specific (common).
2. Doubtful reactions.
- INDIVIDUAL REACTIONS.
3. Sound reactions (neologisms).
4. Neologisms without sound relation.
5. Repetition of preceding reaction.
6. Reaction repeated five times.
7. Repetition of preceding stimulus.
8. Derivatives.
9. Non-specific reactions.
10. Sound reactions (words).
11. Word complements.
12. Particles of speech.
13. Association to preceding stimulus.
14. Association to preceding reaction (by frequency tables).
15. Repetition of previous reaction.
16. Repetition of previous stimulus.
17. Normal (by appendix).
18. Association to preceding reaction (without frequency tables).
19. Unclassified.

§ 6. ERRORS INVOLVED IN THE USE OF ARBITRARY OBJECTIVE STANDARDS.

It may readily be seen that such definiteness and uniformity as this classification possesses results from the introduction of more or less arbitrary criteria for the differentiation of the various types of reactions. The question might arise, To what extent do the distinctions thus made correspond to reality? To consider, for instance, our rule for the placing of sound reactions (50 per cent of the sounds of the shorter word to be present, in the same order, in the other word) : when a given reaction (*man—minstrel*) is in accordance with the rule assigned under the heading of sound reactions, can it be assumed that sound similarity and not some other relationship is the determining factor of the association in question? Or when in a given instance (*cabbage—cobweb*) the sound similarity falls somewhat short of the standard required by the rule, can it be assumed that sound similarity is not, after all, the determining factor?

Similar questions may, of course, arise in connection with other subdivisions.

It must, indeed, be conceded that objective methods can reveal but indirectly and with uncertainty the inner mechanism which produces any association and that in any given instance it would be impossible to establish the correctness of grouping in accordance with such methods. However, to decide that question for any given reaction is really not necessary in practice, since an error

made through **wrongly** placing one, two, or three reactions under any heading is of **no** significance; the types acquire importance only when **represented** by large numbers in a record under consideration; and **when** many reactions fall under a single heading the likelihood of **error**, as affecting the record as a whole, is by that fact alone greatly reduced.

The whole question might more profitably be approached from another point of view: To what extent are the distinctions of this classification useful? An answer to this question can be found only in the results.

§ 7. ANALYSIS OF PATHOLOGICAL MATERIAL.

We present in Table IV. the results of a statistical examination of the records obtained from certain groups of normal subjects and from some groups of insane subjects.

The normal groups have been studied for the purpose of determining the frequency and manner of occurrence among normal subjects of the various types of abnormal reactions. It seemed best for this purpose to consider separately the records of those subjects who gave an unusually large number of individual reactions. Fifty-three records containing fifteen or more individual reactions were found after a fairly diligent search among our normal test records. In the other groups of subjects—persons of common school education, persons of collegiate education, and children—we included no records containing more than ten individual reactions.

The more striking departures from average normal figures are indicated in the table by the use of heavy type.

This table reveals some special associational tendencies as occurring in connection with the psychoses studied. A better insight into the nature of these tendencies can be gained by a special analysis of the test records of each clinical group.

DEMENTIA PRÆCOX.

In this psychosis we find the average number of individual reactions far exceeding not only that of the normal but also that of any other psychosis which we have studied. To a corresponding extent we find the average number of the highest type of normal reactions—the common specific reactions—reduced.

While almost every type of individual reactions shows here an

TABLE IV.

		86 normal subjects, common education; records containing not over 10 individual reactions.			63 normal subjects, college education; records containing not over 10 individual reactions.			48 normal subjects, school records containing not over 10 individual reactions.			63 normal subjects: records containing not under 16 individual reactions.			108 cases of dementia praecox.			33 cases of paranoic conditions.			24 cases of epilepsv.			32 cases of general paresis.			32 cases of manic-depressive insanity.		
		Median per cent of all reactions.	Average per cent of individual reactions.	Median per cent of all reactions.	Average per cent of individual reactions.	Median per cent of all reactions.	Average per cent of individual reactions.	Median per cent of all reactions.	Average per cent of individual reactions.	Median per cent of all reactions.	Average per cent of individual reactions.	Median per cent of all reactions.	Average per cent of individual reactions.	Median per cent of all reactions.	Average per cent of individual reactions.	Median per cent of all reactions.	Average per cent of individual reactions.	Median per cent of all reactions.	Average per cent of individual reactions.	Median per cent of all reactions.	Average per cent of individual reactions.	Median per cent of all reactions.	Average per cent of individual reactions.	Median per cent of all reactions.	Average per cent of individual reactions.	Median per cent of all reactions.	Average per cent of individual reactions.	
		90 39.8 4 4.9 1 1.1	90 39.7 4 4.1 1 0.6	91 39.4 8 6.3 0 0.7	72 71.4 3 4.8 2 2.3	63 58.9 3 4.2 2 2.5	82 71.3 4 4.8 2 3.0	71 63.7 5 6.0 3 3.0	78 71.8 5 6.3 2 2.2	80 71.2 34 4.6 2 3.0	44 5.3 34 4.6 2 3.0	44 5.3 34 4.6 2 3.0	44 5.3 34 4.6 2 3.0	44 5.3 34 4.6 2 3.0	44 5.3 34 4.6 2 3.0	44 5.3 34 4.6 2 3.0	44 5.3 34 4.6 2 3.0	44 5.3 34 4.6 2 3.0	44 5.3 34 4.6 2 3.0	44 5.3 34 4.6 2 3.0	44 5.3 34 4.6 2 3.0	44 5.3 34 4.6 2 3.0	44 5.3 34 4.6 2 3.0	44 5.3 34 4.6 2 3.0	44 5.3 34 4.6 2 3.0	44 5.3 34 4.6 2 3.0	44 5.3 34 4.6 2 3.0	
Common reactions:																												
Specific reactions.....		2 1.8	41.8	1 1.6	42.0	7 7.3	33.4	4 4.8	13.9	3 3.5	16.3	34 3.4	12.6	3 3.6	17.4	44 5.3	34 4.6	2 3.0	44 5.3	34 4.6	2 3.0	44 5.3	34 4.6	2 3.0	44 5.3	34 4.6	2 3.0	44 5.3
Non-specific reactions.....		0 0.1	0.3	0 0.0	0.2	0 0.0	0.4	0 0.0	0.2	0 0.0	0.4	0 0.0	0.4	0 0.0	0.4	0 0.0	0.4	0 0.0	0.4	0 0.0	0.4	0 0.0	0.4	0 0.0	0.4	0 0.0	0.4	0 0.0
Sound reactions (words).....		0 0.1	3.3	0 0.1	1.2	0 0.2	6.3	0 0.4	2.0	0 0.6	1.7	0 0.4	1.7	0 0.5	2.4	0 0.3	1.6	0 0.3	1.6	0 0.3	1.6	0 0.3	1.6	0 0.3	1.6	0 0.3	1.6	0 0.3
Sound reactions (neologisms).....		0 0.0	1.9	0 0.0	0.9	0 0.0	0.1	0 0.1	0.6	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0
Word complements.....		0 0.1	0.3	0 0.0	0.6	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0
Particulates of speech.....		0 0.0	2.2	0 0.0	1.2	0 0.0	1.6	0 0.0	1.6	0 0.0	1.6	0 0.0	1.6	0 0.0	1.6	0 0.0	1.6	0 0.0	1.6	0 0.0	1.6	0 0.0	1.6	0 0.0	1.6	0 0.0	1.6	0 0.0
Association to preceding stimulus.....		0 0.0	1.4	0 0.0	1.2	0 0.0	1.2	0 0.0	1.2	0 0.0	1.2	0 0.0	1.2	0 0.0	1.2	0 0.0	1.2	0 0.0	1.2	0 0.0	1.2	0 0.0	1.2	0 0.0	1.2	0 0.0	1.2	0 0.0
Association to preceding stimulus.....		0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0
Repetition of preceding stimulus.....		0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0
Repetition of previous stimulus.....		0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0
Repetition of preceding reaction.....		0 0.21	4.7	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0	0.3	0 0.0
Repetition of previous reaction.....		0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0
Reaction repeated five times.....		0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0
Neologisms without sound relation.....		0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0	0	0 0.0
Unclassified.....		2 1.8	43.4	1 1.6	39.4	11 11.1	61.2	11 11.1	61.2	11 11.1	61.2	11 11.1	61.2	11 11.1	61.2	11 11.1	61.2	11 11.1	61.2	11 11.1	61.2	11 11.1	61.2	11 11.1	61.2	11 11.1	61.2	11 11.1
Total individual reactions.....		4 4.2	.....	5 5.1	.....	4 3.9	.....	21 21.3	.....	294 94.3	.....	10 31.3	.....	19 57.2	.....	144 50.8	.....	118 21.6	.....	144 50.8	.....	118 21.6	.....	144 50.8	.....	118 21.6	.....	144 50.8

TYPES OF REACTIONS.

Common reactions:

Specific reactions.....

Non-specific reactions.....

Sound reactions (words).....

Sound reactions (neologisms).....

Word complements.....

Particulates of speech.....

Association to preceding stimulus.....

Association to preceding stimulus.....

Repetition of preceding stimulus.....

Repetition of preceding stimulus.....

Repetition of preceding reaction.....

Repetition of previous reaction.....

Neologisms.....

Neologisms without sound relation.....

Unclassified.....

Total individual reactions.....

increase over the normal averages, the most striking increases are shown by the table to be in the groups of unclassified reactions, neologisms, sound reactions, and some types of perseveration. A further examination of the individual test records shows that there is no uniformity of associational tendencies in this clinical group, but that several tendencies are more or less frequently met with either alone or in various combinations. Yet some of these tendencies, when appearing at all prominently, are so highly characteristic of dementia præcox as to be almost pathognomonic. Among these may be mentioned: (1) the tendency to give *neologisms*, particularly those of the senseless type; (2) the tendency to give unclassified reactions largely of the *incoherent* type; and (3) the tendency toward *stereotypy* manifested chiefly by abnormally frequent repetitions of the same reaction. Fairly characteristic also is the occasional tendency to give sound reactions. Again, occasionally one encounters pronounced *perseveration*, and at least two of our subjects gave a good many unclassified reactions obviously due to *distraction*.

It must be noted that not infrequently cases of dementia præcox give test records that cannot be distinguished from normal. It seems that the pathological associational tendencies constitute merely a special group of symptoms, some of which may be expected to be manifest in cases which have reached a state of advanced mental deterioration, but may not necessarily be present in the early stages of the disease. On the other hand there is evidence to show that these tendencies may in some cases appear among the earliest manifestations. This matter will be referred to again.

Thus the test records of dementia præcox depart from the normal not sharply but by a gradual shading off. We find similar gradual transitions between dementia præcox and other psychoses. For this work we selected cases in which the diagnoses were established with reasonable certainty. Whether or not in cases of doubtful clinical classification this association test may be of aid in determining the diagnosis, is a question that must for the present remain open.

We submit herewith copies of test records. The numbers which appear after the reactions indicate in each case the reaction type, in accordance with Table III. (p. 328); common specific reactions are not numbered.

CASE No. 4752.—H. J. Neologisms; some unclassified reactions, mostly incoherent.

Table-meadow	19
Dark-black	
Music-sweet	
Sickness-dead	2
Man-manion	3
Deep-near	19
Soft-sooner	19
Eating-formble	4
Mountain-gair	4
House-temble	4
Black-benched	4
Mutton-ranched	4
Comfort-bumble	4
Hand-semble	4
Short-simber	4
Fruit-narrow	13
Butterfly-Ben	19
Smooth-gum	19
Command-bramble	19
Chair-low	
Sweet-temper	19
Whistle-bensid	4
Woman-hummery	4
Cold-gunst	4
Slow-bemper	4
Wish-tip	19
River-gumper	4
White-Andes	19
Beautiful-gimper	4
Window-hummer	4
Rough-geep	4
Citizen-humper	4
Foot-zuper	4
Spider-gumper	4

Needle-himper	4
Red-gumper	4
Sleep-moop	4
Anger-rumble	19
Carpet-slamper	4
Girl-hinker	4
High-humper	4
Working-gumpip	4
Sour-imper	4
Earth-gumper	4
Trouble-humper	4
Soldier-guipper	4
Cabbage-phar	4
Hard-her	12
Eagle-damnornott	4
Stomach-dumper	4
Stem-gumper	4
Lamp-huntznit	4
Dream-hungnot	4
Yellow-bampir	4
Bread-gumper	4
Justice-sidnerber	4
Boy-eeper	4
Light-huntznit	4
Health-geeper	4
Bible-himpier	4
Memory-hummer	19
Sheep-hunner	4
Bath-bemnitper	4
Cottage-gumper	4
Swift-dumper	4
Blue-dipper	19
Hungry-hummer	3
Priest-rump	19

Ocean-himper	4
Head-hiniper	4
Stove-gamper	4
Long-humble	19
Religion-gumper	4
Whiskey-numper	4
Child-himper	4
Bitter-gehimper	3
Hammer-geuep	4
Thirsty-humper	4
City-deeper	19
Square-hummer	4
Butter-bimper	3
Doctor-harner	4
Loud-harner	4
Thief-himper	4
Lion-humor	19
Joy-gumpier	4
Bed-hoomer	4
Heavy-doomer	4
Tobacco-per	12
Baby-hoomer	4
Moon-gumper	4
Scissors-gumper	4
Quiet-humper	4
Green-geuet	3
Salt-rummer	4
Street-numper	4
King-himper	4
Cheese-guinter	4
Blossom-yunger	4
Afraid-yunger	4

CASE No. 5183.—G. D. Neologisms; numerous unclassified reactions, mostly incoherent; some sound neologisms.

Table-muss	19
Dark-gone	19
Music-caffa	4
Sickness-monk	19
Man-boy	
Deep-lesson	19
Soft-ness	4
Eating-pie	
Mountain-Gus	19
House-muss	15
Black-court	19
Mutton-beef	
Comfort-ness	4
Hand-koy	4
Short-ness	4
Fruit-dalb	4
Butterfly-flack	4
Smooth-mess	19
Command-cork	19
Chair-ness	4
Sweet-Bess	17
Whistle-toy	
Woman-girl	
Cold-cork	15
Slow-mass	19
Wish-vell	4
River-mouth	17
White-cast	17
Beautiful-ness	4
Window-crow	19
Rough-ratter	19
Citizen-zide	4
Foot-mallo	4
Spider-atraw	19

Needle-cast	15
Red-Roman	19
Sleep-scack	4
Anger-gois	4
Carpet-noise	13
Girl-call	18
High-hort	4
Working-kafir	19
Sour-romerascotters	4
Earth-bell	19
Trouble-tramine	4
Soldier-gas	19
Cabbage-cor	4
Hard-kalbas	4
Eagle-bell	15
Stomach-chenic	4
Stem-trackstar	3
Lamp-loss	19
Dream-melso	4
Yellow-ormondo	4
Bread-life	
Justice-quartz	19
Boy-nellan	4
Light-cor	4
Health-hallenbee	4
Bible-book	
Memory-bike	19
Sheep-armen	4
Bath-cor	4
Cottage-callan	4
Swift-swar	3
Blue-blacksen	4
Hungry-scatterbuck	4
Priest-canon	17

Ocean-men	19
Head-will	19
Stove-somen	4
Long-lass	19
Religion-cor	4
Whiskey-hanrow	4
Child-vand	4
Bitter-bike	15
Hammer-hemmel	3
Thirsty-cass	4
City-cor	4
Square-malice	19
Butter-back	19
Doctor-ness	4
Loud-arman	4
Thief-cast	15
Lion-loss	15
Joy-kafir	15
Bed-banrow	4
Heavy-cast	15
Tobacco-colrow	4
Baby-boil	19
Moon-padoc	4
Scissors-kantow	4
Quiet-kilroe	4
Green-graft	10
Salt-semen	19
Street-pess	4
King-guess	19
Cheese-tiffer	4
Blossom-cad	19
Afraid-mellows	19

CASE No. 1500.—D. V. Considerable number of neologisms; stereotypy manifested partly in a tendency toward frequent repetition of certain reactions but mainly in a persistent tendency to make use of the grammatical form of present participle, giving rise to numerous doubtful reactions.

Table—stand	Needle—stinging	2	Ocean—moving	2
Dark—lonesome	Red—coloring		Head—setting	15
Music—playing	Sleep—dreaming		Stove—warm	2
Sickness—disease	Anger—widing	4	Long—slowly	2
Man—hiding	Carpet—cleaning		Religion—everything	19
Deep—unreckless	Girl—pretty	1	Whiskey—burning	
Soft—beginning	High—degrace	4	Child—born	
Eating—plenty	Working—nobody	19	Bitter—taking	19
Mountain—high	Sour—holling	4	Hammer—hitting	2
House—standing	Earth—disgrace	19	Thirsty—drinking	
Black—grivelling	Trouble—plenty		City—welldebell	4
Mutton—plenty	Soldier—shooting	13	Square—taking	15
Comfort—laying	Cabbage—welldebell	4	Butter—soft	
Hand—disease	Hard—caming	4	Doctor—instrument	19
Short—writing	Eagle—setting	19	Loud—speaking	2
Fruit—coming	Stomach—degrivel	4	Thief—gitting	4
Butterfly—flying	Stem—biting	19	Lion—scared	17
Smooth—glimming	Lamp—burning		Joy—playing	2
Command—master	Dream—walking	19	Bed—laying	2
Chair—standing	Yellow—blowing	15	Heavy—raisen	4
Sweet—sugar	Bread—making		Tobacco—eating	19
Whistle—blowing	Justice—unpossible	4	Baby—born	
Woman—loving	Boy—growing	2	Moon—shining	
Cold—cellar	Light—stand	6	Scissors—cutting	
Slow—coming	Health—raising	19	Quiet—hitting	15
Wish—dreaming	Bible—teaching	2	Green—landed	19
River—divided	Memory—together	12	Salt—throwing	19
White—wall	Sheep—weeding	19	Street—walking	
Beautiful—pleasant	Bath—held	19	King—tension	19
Window—breaking	Cottage—standing	2	Cheese—eating	
Rough—tumble	Swift—incurioussable	4	Blossom—growing	2
Citizen—gentleman	Blue—smoooven	4	Afraid—nobody	
Foot—sweating	Hungry—uncareless	4		
Spider—biting	Priest—going	19		

CASE No. 5138.—C. J. Unclassified reactions, mostly incoherent.

Table—tablecloth	Needle—lifter	19	Ocean—waves	
Dark—forward	Red—dove	19	Head—black	
Music—instrument	Sleep—coat	13	Stove—lid	
Sickness—fluid	Anger—smile	19	Long—short	
Man—hemale	Carpet—gas	19	Religion—Christian	
Deep—steep	Girl—kite	19	Whiskey—malt	
Soft—hard	High—cow	19	Child—baby	
Eating—mountain	Working—candy	19	Bitter—sweet	
Mountain—raven	Sour—peach	17	Hammer—nail	
House—shutter	Earth—balloon	19	Thirsty—water	
Black—blue	Trouble—grass	13	City—steeple	19
Mutton—beef	Soldier—brass	17	Square—marble	19
Comfort—discomfort	Cabbage—flea	19	Butter—bread	
Hand—wrist	Hard—cat	19	Doctor—aster	19
Short—tall	Eagle—negro	10	Loud—fog	19
Fruit—vegetable	Stomach—winter	19	Thief—Mary	19
Butterfly—bee	Stem—leaf		Lion—tiger	
Smooth—rough	Lamp—cloth	19	Joy—glad	
Command—orders	Dream—slumber		Bed—sheet	
Chair—sofa	Yellow—pink		Heavy—light	
Sweet—sour	Bread—glass	19	Tobacco—smoke	
Whistle—fife	Justice—coal	19	Baby—powder	
Woman—girl	Boy—maid		Moon—sky	
Cold—warm	Light—shine		Scissors—handle	
Slow—faster	Health—pale	17	Quiet—sing	19
Wish—not	Bible—leaf		Green—pink	
River—neck	Memory—grief	19	Salt—chimney	19
White—blue	Sheep—giraffe	19	Street—block	
Beautiful—homely	Bath—soap		King—crown	
Window—sill	Cottage—scene	19	Cheese—tea	17
Rough—paint	Swift—slow		Blossom—leaves	
Citizen—pedestrian	Blue—piece	19	Afraid—frighten	
Foot—rose	Hungry—food			
Spider—towel	Priest—minister			

CASE No. 17979.—R. T. Unclassified reactions, mostly incoherent.

Table—full	19	Needle—point	15	Ocean—supply	19
Dark—coldness	2	Red—temperature	15	Head—manager	17
Music—aeronaut	19	Sleep—rest	15	Stove—shake	19
Sickness—better	19	Anger—temper	15	Long—journey	19
Man—extension	19	Carpet—court	10	Religion—thought	1
Deep—electrician	19	Girl—birth	10	Whiskey—lusk	4
Soft—harden	2	High—dirt	19	Child—wish	15
Eating—stomach	19	Working—ease	19	Bitter—enmalseladiga	4
Mountain—Lord	19	Sour—balt	4	Hammer—efface	19
House—roof	19	Earth—vexation	19	Thirsty—want	19
Black—darkness	19	Trouble—business	19	City—comforts	15
Mutton—working	19	Soldier—obedient	2	Square—crown	19
Comfort—ahead	12	Cabbage—fell	19	Butter—flavor	15
Hand—mercury	19	Hard—solid	19	Doctor—dram	19
Short—have	12	Eagle—government	19	Loud—temper	15
Fruit—flavor	19	Stomach—chest	19	Thief—caught	2
Butterfly—plant	13	Stem—wish	19	Lion—crown	15
Smooth—level	19	Lamp—brilliance	17	Joy—pleasure	1
Command—obedient	19	Dream—unso	4	Bed—comforts	19
Chair—rest	19	Yellow—color	19	Heavy—thoughts	1
Sweet—polish	19	Bread—crust	19	Tobacco—changes	15
Whistle—note	19	Justice—truth	19	Baby—pleasure	1
Woman—comfort	19	Boy—obedient	19	Moon—brilliance	2
Cold—pleasant	1	Light—heart	2	Scissors—edge	19
Slow—move	19	Health—feeling	19	Quiet—baptism	19
Wish—wealth	19	Bible—scripture	19	Green—autumn	19
River—shell	19	Memory—saying	19	Salt—gather	19
White—change	19	Sheep—wool	19	Street—thoroughfare	19
Beautiful—sat	19	Bath—get	19	King—crown	19
Window—temperature	19	Cottage—morrell	4	Cheese—flavor	15
Rough—shell	15	Swift—good	1	Blossom—wood	17
Citizen—soldier	19	Blue—look	19	Afraid—downhearted	17
Foot—travel	19	Hungry—have	12		
Spider—web	19	Priest—scripture	15		

CASE No. 3307.—G. F. Unclassified reactions, mostly incoherent; slight tendency to respond by sound reactions.

Table—desk	19	Needle—bird	13	Ocean—waves	19
Dark—blue	19	Red—green	19	Head—hat	19
Music—stars	13	Sleep—opening	19	Stove—blackening	2
Sickness—trees	19	Anger—angry	19	Long—garden	19
Man—menace	10	Carpet—stitching	19	Religion—goodness	1
Deep—soap	19	Girl—madam	17	Whiskey—Kummell	17
Soft—excited	19	High—ceiling	19	Child—woman	1
Eating—spelling	10	Working—easy	19	Bitter—coughing	19
Mountain—marbles	19	Sour—warm	19	Hammer—sofa	19
House—train	19	Earth—heaven	19	Thirsty—pillow	18
Black—bed	19	Trouble—astonished	19	City—united	19
Mutton—button	10	Soldier—man	1	Square—oblong	19
Comfort—steak	13	Cabbage—carrot	19	Butter—lard	19
Hand—flexible	19	Hard—softness	2	Doctor—physician	19
Short—umbrella	17	Eagle—parrot	19	Loud—easy	19
Fruit—blanket	19	Stomach—mind	19	Thief—burglar	19
Butterfly—grass	19	Stem—stable	10	Lion—tiger	19
Smooth—sheet	19	Lamp—oil	19	Joy—healthy	2
Command—carpet	19	Dream—awake	19	Bed—thread	10
Chair—store	19	Yellow—darkness	2	Heavy—gloves	17
Sweet—flower	19	Bread—rough	19	Tobacco—cigar	19
Whistle—linen	19	Justice—male	19	Baby—hood	11
Woman—water	19	Boy—buoy	10	Moon—stars	19
Cold—coal	19	Light—standing	19	Scissors—knife	19
Slow—ferry	17	Health—very	12	Quiet—recollect	17
Wish—sample	19	Bible—ashamed	19	Green—ring	19
River—shades	19	Memory—staring	19	Salt—pencil	19
White—blue	19	Sheep—stock	19	Street—bushes	19
Beautiful—suspender	19	Bath—sponge	19	King—Germany	17
Window—wood	19	Cottage—house	19	Cheese—rice	17
Rough—chisel	19	Swift—mouse	19	Blossom—pepper	19
Citizen—ruler	19	Blue—fall	19	Afraid—allspice	18
Foot—snake	19	Hungry—appetite	19		
Spider—fly	19	Priest—pastor	19		

CASE No. 971.—O. M. Unclassified reactions, mostly incoherent.

Table-vote	19	Needle-pin		Ocean-sea	
Dark-plenty	19	Red-white		Head-cranium	
Music-health	19	Sleep-apple	13	Stove-soft	19
Sickness-fright		Anger-sour	19	Long-biles	4
Man-manager	10	Carpet-wool		Religion-bunion	10
Deep-slow	19	Girl-boy		Whiskey-vinegar	17
Soft-pepper	19	High-low		Child-edge	19
Eating-vanity	19	Working-height	13	Bitter-born	10
Mountain-slept	19	Sour-pitcher	19	Hammer-wood	
House-courage	19	Earth-clam	19	Thirsty-cradle	19
Black-funeral		Trouble-necessity	9	City-flames	19
Mutton-age	19	Soldier-marine		Square-eating	19
Comfort-slide	19	Cabbage-watermelon	17	Butter-dirt	19
Hand-credit	19	Hard-cracker	17	Doctor-malefactor	19
Short-Simpson	17	Eagle-bright	19	Loud-quinine	19
Fruit-physician	19	Stomach-back		Thief-joy	19
Butterfly-torment	19	Stem-stimulant	10	Lion-sage	19
Smooth-button	17	Lamp-hair	19	Joy-thorn	19
Command-scarf	19	Dream-knees	19	Bed-draper	19
Chair-rage	19	Yellow-amen	12	Heavy-close	19
Sweet-cider	17	Bread-general	19	Tobacco-weed	
Whistle-lace	19	Justice-no	2	Baby-stop	19
Woman-debt	19	Boy-grass	19	Moon-starch	19
Cold-powderly	4	Light-thought	9	Scissors-crepe	17
Slow-telephone	19	Health-depression	17	Quiet-bustle	19
Wish-regret	17	Bible-judger	4	Green-color	
River-herald	19	Memory-stomach	19	Salt-throw	19
White-black		Sheep-crusade	19	Street-ferment	19
Beautiful-jolly	19	Bath-labor	19	King-jaunce	4
Window-pane		Cottage-cotton	10	Cheese-tepid	19
Rough-duty	19	Swift-depth	19	Blossom-woman	9
Citizen-ward	17	Blue-crimson	17	Afriad-shame	17
Foot-minister	19	Hungry-alloyed	19		
Spider-handsome	19	Priest-politicians	17		

CASE No. 01655.—E. H. Unclassified reactions, mostly incoherent.

Table-cent	19	Needle-drops	15	Ocean-stop	15
Dark-sweet		Red-glass	17	Head-strap	19
Music-delighted	2	Sleep-suita	19	Stove-pot	17
Sickness-pop	19	Anger-suita	5	Long-name	
Man-change	19	Carpet-hat	19	Religion-day	13
Deep-pass	19	Girl-president	19	Whiskey-take	19
Soft-drop	19	High-pass	19	Child-jaw	17
Eating-fair	19	Working-knock	19	Bitter-licorice	17
Mountain-heavy	19	Sour-cake	19	Hammer-sound	
House-fate	19	Earth-home		Thirsty-cards	19
Black-right	19	Trouble-news	17	City-dice	18
Mutton-with	12	Soldier-name	19	Square-muff	19
Comfort-indeed	12	Cabbage-rule	19	Butter-stick	19
Hand-span	10	Hard-rope	19	Doctor-perfect	19
Short-stop		Eagle-in	12	Loud-walk	15
Fruit-dip	19	Stomach-potato	17	Thief-jail	
Butterfly-home	19	Stem-pick		Lion-cow	
Smooth-days	19	Lamp-berry	18	Joy-nail	19
Command-stop	15	Dream-book		Bed-new	19
Chair-pledge	19	Yellow-lettuce	10	Heavy-down	12
Sweet-right	15	Bread-chews	17	Tobacco-prize	19
Whistle-home	15	Justice-night	15	Baby-new	15
Woman-Louisa	17	Boy-bat	17	Moon-new	
Cold-chair	16	Light-rasp	19	Scissors-teach	19
Slow-aid	19	Health-off	12	Quiet-man	1
Wish-book	2	Bible-comforter	2	Green-water	17
River-shoes	19	Memory-candy	19	Salt-money	19
White-ouch	12	Sheep-eat		Street-right	15
Beautiful-not	12	Bath-sweet	19	King-girl	19
Window-papers	19	Cottage-walk	19	Cheese-house	19
Rough-lettuce	19	Swift-reason	19	Blossom-work	1
Citizen-money	17	Blue-dot	19	Afraid-jars	19
Foot-stand		Hungry-swift	19		
Spider-socks	19	Priest-birth	19		

CASE M. F. (from Hudson River State Hospital).—Unclassified reactions, mostly incoherent.

Table-heat	19	Needle-action	19	Ocean-pilot	17
Dark-succeed	19	Red-atout	19	Head-tin	19
Music-benefit	19	Sleep-lazy	17	Stove-plate	17
Sickness-steep	19	Anger-anguish	19	Long-trouble	19
Man-dicut	4	Carpet-knowledge	19	Religion-soap	19
Deep-rectify	19	Girl-first	10	Whiskey-starch	18
Soft-bed	19	High-hand	19	Child-night	19
Eating-dozy	19	Working-power	17	Bitter-contentment	19
Mountain-tulu	4	Sour-mud	19	Hammer-shortness	19
House-sails	19	Earth-sky	19	Thirsty-knife	19
Black-sunrise	19	Trouble-sorrow	19	City-mind	19
Mutton-tuition	19	Soldier-manhood	2	Square-truth	2
Comfort-blasphemous	19	Cabbage-righteous	19	Butter-biscuit	19
Hand-doing	19	Hard-beaten	17	Doctor-piles	17
Short-pest	19	Eagle-dog	19	Loud-distrust	19
Fruit-charm	19	Stomach-paste	19	Thief-babies	19
Butterfly-doctor	19	Stem-dust	10	Lion-hair	19
Smooth-border	19	Lamp-fall	19	Joy-eyesight	19
Command-right	19	Dream-idle	17	Bed-dievos	4
Chair-distill	19	Yellow-zone	19	Heavy-determined	19
Sweet-noticed	19	Bread-pan	17	Tobacco-health	19
Whistle-stead	19	Justice-tricks	17	Baby-wood	19
Woman-splice	19	Boy-barrel	19	Moon-heat	15
Cold-strap	19	Light-powers	15	Scissors-squeeze	19
Slow-chief	19	Health-kindness	19	Quiet-tears	19
Wish-shame	19	Bible-story	19	Green-fall	15
River-word	19	Memory-pillow	19	Salt-soft	19
White-color	19	Sheep-veil	19	Street-wait	19
Beautiful-better	19	Bath-ink	19	King-inches	19
Window-dull	19	Cottage-paper	19	Cheese-doctor	15
Rough-bright	18	Swift-arrow	19	Blossom-fades	19
Citizen-chum	19	Blue-cold	19	Afraid-hearts	2
Foot-relax	19	Hungry-dyes	19		
Spider-float	19	Priest-cloak	19		

CASE No. 01552.—E. J. D. Unclassified reactions, mostly incoherent.

Table-unicorn	19	Spider-jungle	19	Priest-pedestrian	15
Dark-African	17	Needle-man	9	Ocean-commotion	19
Music-love	19	Red-monde	4	Head-sugar	19
Sickness-slumber	17	Sleep-resuscitation	4	Stove-writer	19
Man-minstrel	10	Anger-uncared	19	Long-mingle	19
Deep-river	19	Carpet-foreign	15	Religion-tent	19
Soft-highwayman	19	Girl-celt	19	Whiskey-copulency	4
Eating-England	19	High-wine	10	Child-editor	19
Mountain-pleasure	1	Working-prayer	19	Bitter-backward	19
House-Christianity	19	Sour-flower	10	Hammer-youth	19
Black-directory	19	Earth-tariff	19	Thirsty-salt	17
Mutton-capers	19	Trouble-ledger	19	City-gentler	19
Comfort-mankind	12	Soldier-work	1	Square-angelus	19
Hand-surface	19	Cabbage-ancient	19	Butter-pastry	17
Short-court	10	Hard-provender	19	Doctor-veterinary	17
Fruit-pleasure	1	Eagle-school	19	Loud-muslin	19
Butterfly-dispatcher	19	Stomach-bowels	19	Thief-grocer	19
Smooth-navigation	19	Stem-tide	19	Lion-trip	19
Command- administration	19	Lamp-scientific	19	Joy-penance	17
Chair-time	19	Dream-somno	4	Bed-granite	19
Sweet-office	13	Yellow-pain	19	Heavy-note	19
Whistle-foreign	19	Bread-populous	19	Tobacco-vanase	4
Woman-usefulness	1	Justice-thwart	19	Baby-school	15
Cold-frigid	19	Boy-globe	19	Moon-element	19
Slow-vocation	19	Light-female	13	Scissors-elderly	19
Wish-longing	19	Health-linen	19	Quiet-trinity	19
River-tributary	17	Bible-divine	17	Green-commissioner	19
White-island	13	Memory-current	19	Salt-strength	19
Beautiful-unseen	19	Sheep-water	19	Street-voyager	19
Window-frugal	19	Bath-rain	18	King-sorrow	19
Rough-nautical	19	Cottage-journal	19	Cheese-holiday	19
Citizen-pedestrian	19	Swift-yacht	17	Blossom-parks	19
Foot-laugh	19	Blue-novel	19	Afraid-stamina	17
		Hungry-viand	2		

CASE No. 667.—C. L. Pronounced stereotypy. Following note on test record: "Many attempts were made to secure a reaction other than 'cat,' but usually without success; the reaction *cold—warm* was given spontaneously and with apparent interest; most reactions were given only in response to much urging, or else mechanically, without attention."

Table-cat	6	Needle-cat	6	Ocean-cat	5
Dark-rat	18	Red-button	15	Head-cat	5
Music-shoe	19	Sleep-cat	6	Stove-cat	5
Sickness-cat	6	Anger-go	15	Long-cat	5
Man-boy	19	Carpet-cat	6	Religion-cat	5
Deep-cat	6	Girl-in	12	Whiskey-cat	5
Soft-hat	19	High-little	19	Child-cat	5
Eating-cat	6	Working-cold	19	Bitter-cat	5
Mountain-hit	19	Sour-cat	6	Hammer-cat	5
House-gold	19	Earth-tag	19	Thirsty-cat	5
Black-woman	9	Trouble-cat	6	City-cat	5
Mutton-get	19	Soldier-cat	5	Square-cat	5
Comfort-cousin	19	Cabbage-cat	5	Butter-cat	5
Hand-Jesus	19	Hard-cat	5	Doctor-cat	5
Short-hat	15	Eagle-cat	5	Loud-cat	5
Fruit-hand	16	Stomach-cat	15	Thief-cat	5
Butterfly-going	19	Stem-hat	6	Lion-cat	5
Smooth-hat	15	Lamp-cat	6	Joy-cat	5
Command-boy	19	Dream-cat	5	Bed-cat	5
Chair-hat	15	Yellow-cat	5	Heavy-cat	5
Sweet-cat	6	Bread-cat	5	Tobacco-cat	5
Whistle-boy	19	Justice-cat	5	Baby-cat	5
Woman-cat	19	Boy-cat	5	Moon-cat	5
Cold-warm	19	Light-cat	5	Scissors-cat	5
Slow-button	19	Health-cat	5	Quiet-cat	5
Wish-cat	6	Bible-cat	5	Green-cat	5
River-cat	5	Memory-cat	5	Salt-cat	5
White-rat	15	Sheep-cat	5	Street-cat	5
Beautiful-good	1	Bath-cat	5	King-cat	5
Window-wheel	19	Cottage-cat	5	Cheese-cat	5
Rough-good	9	Swift-cat	5	Blossom-cat	5
Citizen-candy	19	Blue-cat	5	Afraid-cat	5
Foot-cat	6	Hungry-cat	5		
Spider-dog	19	Priest-cat	5		

CASE No. 6006.—E. T. S. Stereotypy.

Table-cat	6	Needle-needed	5	Ocean-fresh	19
Dark-unkindness	19	Red-beautiful	2	Head-unhealthy	15
Music-beautiful	1	Sleep-beautiful	1	Stove-warmth	19
Sickness-suffering	1	Anger-needed	6	Long-length	6
Man-good	1	Carpet-needed	5	Religion-needed	2
Deep-unkindness	15	Girl-needed	5	Whiskey-needed	5
Soft-unkindness	5	High-height	19	Child-needed	5
Eating-digesting	19	Working-needed	6	Bitter-needed	5
Mountain-low	19	Sour-needed	5	Hammer-needed	5
House-small	1	Earth-needed	5	Thirsty-water	5
Black-darkness	1	Trouble-trust	10	City-pretty	6
Mutton-good	1	Soldier-needed	6	Square-honest	1
Comfort-home	1	Cabbage-needed	5	Butter-good	1
Hand-useful	1	Hard-trouble	19	Doctor-needed	5
Short-useful	5	Eagle-beautiful	6	Loud-needed	5
Fruit-healthy	19	Stomach-trouble	10	Thief-trust	19
Butterfly-beautiful	1	Stem-shoot	10	Lion-love	19
Smooth-unkindness	15	Lamp-light	1	Joy-laughter	19
Command-great	9	Dream-pleasant	1	Bed-comfortable	19
Chair-useful	1	Yellow-pretty	1	Heavy-sleepiness	2
Sweet-healthy	15	Bread-good	1	Tobacco-needed	6
Whistle-beautiful	6	Justice-needed	6	Baby-needed	5
Woman-good	1	Boy-needed	5	Moon-needed	5
Cold-unhealthy	19	Light-pretty	6	Scissors-needed	5
Slow-good	6	Health-needed	5	Quiet-pleasure	1
Wish-always	12	Bible-needed	5	Green-me	12
River-needed	6	Memory-needed	2	Salt-needed	19
White-pretty	1	Sheep-needed	5	Street-needed	5
Beautiful-trees	19	Bath-needed	5	King-needed	5
Window-needed	6	Cottage-needed	5	Cheese-needed	5
Rough-unneeded	4	Swift-needed	5	Blossom-needed	5
Citizen-needed	6	Blue-pretty	1	Afraid-nervous	19
Foot-needed	2	Hungry-food	19		
Spider-needed	5	Priest-Father	19		

CASE No. 2292.—C. M. Perseveration: numerous instances of association to preceding reaction; unclassified reactions, mostly incoherent.

Table-tree	19	Needle-thread		Ocean-turnip	13
Dark-night		Red-sew	13	Head-hair	
Music-instrument		Sleep-rest		Stove-coal	
Sickness-smoke	19	Anger-health	13	Long-wood	13
Man-woman	1	Carpet-carrots	10	Religion-lemon	10
Deep-water		Girl-eat	19	Whiskey-wheat	17
Soft-tide	18	High-horse	19	Child-rye	18
Eating-potato		Working-hay	15	Bitter-medicine	
Mountain-milk	13	Sour-cut	19	Hammer-nail	
House-clay	17	Earth-machine	19	Thirsty-beer	
Black-polish	17	Trouble-repair	18	City-cake	19
Mutton-goat		Soldier-mow	19	Square-pie	13
Comfort-cream	10	Cabbage-plant		Butter-cream	
Hand-hay	19	Hard-seed	18	Doctor-herb	19
Short-meat	19	Eagle-bird		Loud-duck	19
Fruit-pears		Stomach-egg	17	Thief-feathers	13
Butterfly-flower		Stem-join		Lion-animal	
Smooth-smell	10	Lamp-oil		Joy-peace	
Command-drink	19	Dream-burn	13	Bed-sleep	
Chair-wine	18	Yellow-gas	18	Heavy-rest	13
Sweet-honey		Bread-flour		Tobacco-chew	
Whistle-wind		Justice-drink	19	Baby-chair	19
Woman-whiskey	19	Boy-girl	9	Moon-sun	
Cold-fire		Light-man	9	Scissors-cut	
Slow-speed		Health-woman	1	Quiet-hair	18
Wish-go		Bible-baby	10	Green-grapes	
River-boat		Memory-want	19	Salt-bag	19
White-stem	13	Sheep-lamb		Street-stone	
Beautiful-cloak	17	Bath-water		King-cement	18
Window-drift		Cottage-hay	15	Cheese-money	19
Rough-storm		Swift-corn	18	Blossom-flower	
Citizen-citron	10	Blue-eat	18	Afraid-fast	19
Foot-feed	19	Hungry-ham	17		
Spider-web		Priest-pickle	18		

CASE No. 17880.—E. D. Numerous repetitions of reactions previously given; unclassified reactions, mostly incoherent; neologisms.

Table-eating		Needle-clothing	2	Ocean-help	6
Dark-night		Red-color		Head-knowing	2
Music-piano		Sleep-stoppery	4	Stove-cooking	
Sickness-stoppery	4	Anger-unguarded	17	Long-bank	19
Man-manly		Carpet-residence	15	Religion-church	
Deep-knowing	6	Girl-help	6	Whiskey-drink	
Soft-undoable	4	High-escorted	6	Child-help	6
Eating-oblong	19	Working-man	1	Bitter-error	10
Mountain-guide	19	Sour-form	15	Hammer-builder	2
House-residing	2	Earth-platformer	4	Thirsty-drink	
Black-dress		Trouble-unguarded	15	City-building	
Mutton-aiding	19	Soldier-gentinel	2	Square-unerrorer	4
Comfort-escorted	6	Cabbage-dinners	2	Butter-eating	
Hand-escorted	5	Hard-escorted	6	Doctor-destroyer	10
Short-unescorted	18	Eagle-newspaper	17	Loud-notoriety	17
Fruit-eating		Stomach-health		Thief-error	15
Butterfly-interfere	19	Stem-winding		Lion-lord	19
Smooth-knowing	6	Lamp-reading		Joy-escorted	6
Command-unerrorer	4	Dream-guarded	19	Bed-unescorted	15
Chair-seated		Yellow-aged	10	Heavy-unescorted	5
Sweet-durable	19	Bread-knowing	6	Tobacco-chewing	
Whistle-treated	19	Justice-bar	17	Baby-help	6
Woman-help	2	Boy-help	6	Moon-knowing	6
Cold-stoppery	4	Light-advice	19	Scissors-tailor	
Slow-unknowing	4	Health-doableness	4	Quiet-form	15
Wish-treated	15	Bible-church		Green-moneyed	19
River-boats		Memory-knowing	2	Salt-eating	
White-treasurer	19	Sheep-aided	15	Street-city	
Beautiful-form		Bath-stoppery	4	King-adds	19
Window-outlook		Cottage-seashore		Cheese-eating	
Rough-unescorted	15	Swift-business	17	Blossom-escorted	6
Citizen-residing	2	Blue-help	6	Afraid-unguarded	15
Foot-travel		Hungry-unadded	4		
Spider-stoppery	4	Priest-Rome	19		

CASE No. 6065.—A. F. Unclassified reactions, mostly incoherent; perseveration: instances of association to preceding reaction and to preceding stimulus.

Table—stove	19	Needle—pins	9	Ocean—ship	19
Dark—clear	19	Red—person	17	Head—height	2
Music—calm	19	Sleep—nervous	15	Stove—people	9
Sickness—exact	19	Anger—determined	15	Long—heart	15
Man—particular	18	Carpet—floor	1	Religion—Catholic	19
Deep—personal	13	Girl—man	19	Whiskey—Brooklyn	18
Soft—frank	19	High—fruit	10	Child—New York	18
Eating—determined	19	Working—wear	10	Bitter—frost	19
Mountain—idea	19	Sour—sweet	10	Hammer—summer	10
House—street	19	Earth—early	10	Thirsty—fall	18
Black—water	19	Trouble—state	16	City—autumn	18
Mutton—ground	18	Soldier—girl	9	Square—winter	19
Comfort—country	19	Cabbage—woman	19	Butter—daily	19
Hand—fire	10	Hard—heart	19	Doctor—midnight	18
Short—straight	19	Eagle—bird	19	Loud—forenoon	18
Fruit—flowers	19	Stomach—friend	19	Thief—afternoon	18
Butterfly—horn	19	Stem—tree	19	Lion—evening	18
Smooth—farm	2	Lamp—couch	19	Joy—sorrow	19
Command—forbidden	19	Dream—desk	19	Bed—obstinate	19
Chair—bed	14	Yellow—table	19	Heavy—indifferent	19
Sweet—sugar	13	Bread—chair	19	Tobacco—pipe	18
Whistle—noise	13	Justice—truth	19	Baby—mother	18
Woman—boy	14	Boy—honor	19	Moon—daughter	18
Cold—house	19	Light—tails	19	Scissors—son	18
Slow—store	19	Health—care	19	Quiet—sister	18
Wish—work	17	Bible—book	19	Green—brother	19
River—sound	19	Memory—remembrance	19	Salt—forward	19
White—blue	13	Sheep—free	19	Street—proper	19
Beautiful—fair	19	Bath—court	19	King—vulgar	18
Window—door	19	Cottage—pitcher	19	Cheese—personal	15
Rough—glass	19	Swift—strong	18	Blossom—tree	19
Citizen—dress	15	Blue—delicate	19	Afraid—fear	19
Foot—exact	19	Hungry—bread	19		
Spider—fly	19	Priest—church	19		

CASE No. 17188.—G. B. Sound reactions; unclassified reactions, mostly incoherent.

Table—tablet	10	Needle—shoe	19	Ocean—hat	15
Dark—dot	10	Red—book	19	Head—broom	19
Music—Lizzie	19	Sleep—sifting	19	Stove—fan	19
Sickness—Josh	17	Anger—Freeman	19	Long—time	19
Man—McMahon	10	Carpet—longing	19	Religion—Yukon	19
Deep—deaf (deaf)	10	Girl—gone	19	Whiskey—Freeman	15
Soft—sulphur	10	High—law	19	Child—Hopkins	17
Eating—itching	10	Working—back	15	Bitter—brown	19
Mountain—mouth	10	Sour—clock	19	Hammer—hands	19
House—horse	10	Earth—flower	19	Thirsty—thirty	10
Black—back	10	Trouble—sensibility	17	City—sure	19
Mutton—button	10	Soldier—sodder	10	Square—squire	10
Comfort—community	10	Cabbage—Cabot	10	Butter—Tam O'Shanter	10
Hand—hat	10	Hard—done	2	Doctor—Dorsan	10
Short—shore	10	Eagle—time	19	Loud—law	15
Fruit—Freehoff	10	Stomach—mat	19	Thief—child	19
Butterfly—bustly	3	Stem—water	19	Lion—dirty	19
Smooth—small	1	Lamp—florist	19	Joy—commerce	19
Command—Cummings	10	Dream—Conners	19	Bed—strike	19
Chair—cherries	10	Yellow—flower	19	Heavy—Walden	19
Sweet—sweeten	8	Bread—water	19	Tobacco—Alice	19
Whistle—Walters	19	Justice—Gaynor	17	Baby—water	15
Woman—wayman	10	Boy—passion	19	Moon—handsome	19
Cold—laboratory	19	Light—life	19	Scissors—comet	19
Slow—slaw	10	Health—wealth	19	Quiet—tiger	19
Wish—wishbone	19	Bible—gone	15	Green—tree	19
River—Ontario	17	Memory—Hans	19	Salt—salary	10
White—William	19	Sheep—pasture	19	Street—prunes	19
Beautiful—bureau	10	Bath—Rogan	19	King—kind	19
Window—Weldon	10	Cottage—house	19	Cheese—handsome	15
Rough—saw	17	Swift—swim	10	Blossom—pretty	1
Citizen—Sendow	17	Blue—Thompson	19	Afraid—Africa	10
Foot—hoof	17	Hungry—memory	16		
Spider—web	19	Priest—golden	18		

CASE No. 6238.—M. H. Sound reactions; unclassified reactions, mostly incoherent.

Table—token	19	Needle—nothing	18	Ocean—open	10
Dark—dye	17	Red—rose	12	Head—heart	10
Music—meat	10	Sleep—should	12	Stove—steel	10
Sickness—sorrow	17	Anger—after	10	Long—little	15
Man—mother	17	Carpet—cat	10	Religion—right	12
Deep—dark	17	Girl—God	19	Whiskey—when	12
Soft—silk	17	High—heaven	2	Child—chimney	19
Eating—elephant	19	Working—will	2	Bitter—both	19
Mountain—many	10	Sour—sweet	14	Hammer—heart	15
House—home	10	Earth—eaten	14	Thirsty—think	9
Black—brown	10	Trouble—tea	10	City—church	17
Mutton—men	10	Soldier—sailor	19	Square—swift	19
Comfort—cat	10	Cabbage—cobweb	12	Butter—bread	10
Hand—hat	10	Hard—haven't	15	Doctor—debtor	10
Short—shift	10	Eagle—eaten	15	Loud—loaf	19
Fruit—free	10	Stomach—sat	10	Thief—theatre	10
Butterfly—baby	19	Stem—should	12	Lion—liar	19
Smooth—soft	19	Lamp—little	12	Joy—jam	19
Command—cat	10	Dream—did	19	Bed—broom	19
Chair—comfort	10	Yellow—you	10	Heavy—hard	19
Sweet—sugar	19	Bread—butter	10	Tobacco—Tom	19
Whistle—wine	19	Justice—Jesus	10	Baby—brother	19
Woman—when	10	Boy—baby	14	Moon—men	2
Cold—cat	15	Light—love	14	Scissors—shift	10
Slow—short	12	Health—heaven	19	Quiet—quilt	19
Wish—when	12	Bible—bitch	19	Green—grass	19
River—Rhine	10	Memory—man	1	Salt—said	19
White—when	10	Sheep—shepherd	10	Street—Stevens	10
Beautiful—baby	19	Bath—both	10	King—kite	19
Window—wide	19	Cottage—cat	10	Cheese—cat	15
Rough—red	19	Swift—said	19	Blossom—bad	9
Citizen—company	19	Blue—bad	9	Afraid—anger	19
Foot—feeling	19	Hungry—haven't	12		
Spider—speck	10	Priest—Pope	12		

CASE No. 12720.—J. B. Unclassified reactions, many of which are probably due to distraction; some stereotypy. Note on test record states: "Influenced by sensory impressions, but gave good attention to each stimulus word. Had some difficulty in limiting his response to one word, but made all possible effort to comply with every request. On one occasion he was asked to react with his eyes closed, but was unable, under the unnatural conditions, to respond with one word."

Table—floor	19	Needle—name	19	Ocean—flag	15
Dark—light	19	Red—sunlight	19	Head—cabbage	19
Music—shoe	19	Sleep—flag	13	Stove—rivet	17
Sickness—well	19	Anger—slant	19	Long—floor	19
Man—boy	19	Carpet—rip	19	Religion—priest	19
Deep—sea	19	Girl—lady	19	Whiskey—tin	19
Soft—soap	19	High—stripe	19	Child—shadow	6
Eating—tea	17	Working—steam	17	Bitter—black	15
Mountain—forest	17	Sour—handkerchief	19	Hammer—buttons	15
House—horse	10	Earth—ground	19	Thirsty—shadow	6
Black—sill	19	Trouble—insect	19	City—back	15
Mutton—tablecloth	17	Soldier—army	19	Square—oval	19
Comfort—black	16	Cabbage—sill	15	Butter—table	19
Hand—fingers	19	Hard—washstand	19	Doctor—doorway	10
Short—wrist	13	Eagle—blue	15	Loud—shadow	6
Fruit—soup	17	Stomach—tap	19	Thief—butter	19
Butterfly—grape	13	Stem—sill	15	Lion—difference	16
Smooth—coat	19	Lamp—back	19	Joy—ink	15
Command—vest	18	Dream—shadow	2	Bed—butter	15
Chair—pillow	19	Yellow—blanket	19	Heavy—shadow	6
Sweet—brick	19	Bread—horizontal	19	Tobacco—wood	13
Whistle—knuckles	19	Justice—ink	19	Baby—wall	17
Woman—wall	19	Boy—taste	19	Moon—lightning	15
Cold—eating	19	Light—yellow	19	Scissors—book	15
Slow—swift	19	Health—book	19	Quiet—yellow	19
Wish—knob	19	Bible—Joseph	17	Green—sole	19
River—pad	19	Memory—Joe	18	Salt—ink	15
White—book	19	Sheep—pillow	19	Street—sides	19
Beautiful—shadow	6	Bath—Mott	19	King—stripes	19
Window—stockings	19	Cottage—globe	19	Cheese—butter	19
Rough—stand	19	Swift—continue	19	Blossom—trees	19
Citizen—blue	19	Blue—notice	19	Afraid—boy	19
Foot—brass	19	Hungry—Josephine	19		
Spider—shoelace	19	Priest—sixteen	12		

CASE NO. 5374.—J. F. Perseveration; some stereotypy; sound reactions; unclassified reactions many of which are probably due to distraction. Note on test record states: "Understood what was expected, but could not be induced to give much attention to the stimulus words; sat facing a window, and showed a strong tendency to merely name objects in sight. Reaction time very short, in some cases so short that it is doubtful if he recognized the stimulus word at all."

Table—God	19	Needle—pin		Ocean—preacher	13
Dark—angel	18	Red—cushion	18	Head—dead	10
Music—bird		Sleep—black	13	Stove—store	10
Sickness—woman	9	Anger—white	14	Long—lone	10
Man—male		Carpet—vengency	4	Religion—world	19
Deep—dove	19	Girl—noodles	19	Whiskey—whisper	10
Soft—dog	19	High—macaroni	18	Child—gule	4
Eating—horse	18	Working—tomatoes	18	Bitter—Rugby	19
Mountain—mule	18	Sour—asparagus	18	Hammer—ball	18
House—dog		Earth—oakry	4	Thirsty—sun	19
Black—rabbit	18	Trouble—peas	19	City—Christ	10
Mutton—hen	18	Soldier—beans	18	Square—Jesus	18
Comfort—dog	15	Cabbage—greens		Butter—Joe	19
Hand—clock		Hard—cow	19	Doctor—John	17
Short—myself		Eagle—robin		Loud—Luke	18
Fruit—post	19	Stomach—hawk	13	Thief—St. Matthew	18
Butterfly—bricks	19	Stem—fishes	19	Lion—lie	10
Smooth—glass		Lamp—whale	18	Joy—George	10
Command—sand	10	Dream—shark	18	Bed—Beth	10
Chair—leaf	19	Yellow—crabs	18	Heavy—tither	4
Sweet—wood	19	Bread—red	10	Tobacco—iron	13
Whistle—earth	19	Justice—jam	19	Baby—blade	10
Woman—grass	14	Boy—be	2	Moon—stars	
Cold—mustard	19	Light—girl	13	Scissors—sun	13
Slow—kale	19	Health—filth	10	Quiet—wired	10
Wish—lampsquob	4	Bible—book		Green—mean	10
River—ten	12	Memory—bad	1	Salt—Lou	19
White—rock	17	Sheep—dat	4	Street—vault	19
Beautiful—water	17	Bath—oval	19	King—sepulchre	18
Window—scene		Cottage—nurse	19	Cheese—Presbyterian	19
Rough—been	12	Swift—begin	19	Blossom—Baptist	18
Citizen—house	13	Blue—joy	19	Afraid—Methodist	18
Foot—stable	2	Hungry—wonder	10		
Spider—horse	13	Priest—apostle	17		

CASE NO. 1431.—A. L. Sound reactions; particles; unclassified reactions, mostly incoherent.

Table—ammitting	4	Needle—Hercules	19	Ocean—river	
Dark—cat		Red—green		Head—sea	13
Music—hello	12	Sleep—deep	19	Stove—Venus	19
Sickness—spelling	19	Anger—grief		Long—hog	19
Man—then	12	Carpet—cheap	19	Religion—pigeon	10
Deep—heap	10	Girl—ink	19	Whiskey—gin	
Soft—deep	7	High—I	10	Child—thing	19
Eating—people	1	Working—loafing		Bitter—better	10
Mountain—striking	19	Sour—hour	10	Hammer—happy	9
House—pat	19	Earth—hurt	10	Thirsty—whiskey	17
Black—and	12	Trouble—bubble	10	City—fitting	10
Mutton—it	12	Soldier—yes	12	Square—round	
Comfort—herself	12	Cabbage—garbage	10	Butter—shut	10
Hand—self	19	Hard—hitting	17	Doctor—exercise	19
Short—length		Eagle—fitting	19	Loud—accounts	10
Fruit—long	13	Stomach—pitting	19	Thief—endless	19
Butterfly—quick	19	Stem—condemned	10	Lion—tiger	
Smooth—edges	19	Lamp—stamp	10	Joy—fast	19
Command—first	17	Dream—stained	19	Bed—grass	19
Chair—exact	19	Yellow—purple		Heavy—heaving	10
Sweet—nicest	2	Bread—pimple	19	Tobacco—queen	19
Whistle—thistle	10	Justice—suit	17	Baby—water	19
Woman—pins	19	Boy—ahoy	12	Moon—room	19
Cold—waving	19	Light—night		Scissors—pants	17
Slow—swift		Health—wealth		Quiet—razor	13
Wish—choice	17	Bible—indeed	12	Green—steel	18
River—never	10	Memory—remembering		Salt—sharp	
White—black		Sheep—cow		Street—fence	19
Beautiful—much	19	Bath—sponge		King—bring	10
Window—such	19	Cottage—people	1	Cheese—eggs	
Rough—exact	15	Swift—left	10	Blossom—see	19
Citizen—just		Blue—shift	19	Afraid—awaiting	19
Foot—root	10	Hungry—property	19		
Spider—diving	19	Priest—judge	2		

CASE No. 6251.—C. D. Some stereotypy; particles; unclassified reactions, mostly incoherent.

Table—doctor	19	Needle—ether	19	Ocean—land	
Dark—nigger	17	Red—pot		Head—millionaire	19
Music—violin		Sleep—wake		Stove—twenty-five	12
Sickness—whores	19	Anger—mad		Long—thirty-four	12
Man—Mulcane	17	Carpet—pretty	1	Religion—churches	
Deep—deaf	19	Girl—boy		Whiskey—plenty	6
Soft—hearing	18	High—Heidel	10	Child—baby	
Eating—pillow	13	Working—never		Bitter—sorrow	
Mountain—sight	19	Sour—sweet		Hammer—court	19
House—pure	19	Earth—bride	19	Thirsty—blood	11
Black—nigger		Trouble—mischief		City—this	12
Mutton—plenty	6	Soldier—war		Square—I	12
Comfort—middle	19	Cabbage—head		Butter—plenty	6
Hand—left	17	Hard—never	6	Doctor—millionaire	15
Short—one	12	Eagle—fly		Loud—tell	17
Fruit—up	12	Stomach—go	19	Thief—rich	19
Butterfly—bird		Stem—study	10	Lion—west	19
Smooth—never	6	Lamp—light		Joy—ever	12
Command—commodore	10	Dream—behave	19	Bed—constance	15
Chair—seat		Yellow—false	19	Heavy—fine	9
Sweet—sugar		Bread—plenty	6	Tobacco—back	10
Whistle—highest	19	Justice—just		Baby—millionaire	15
Woman—Constance	17	Boy—come	19	Moon—always	12
Cold—temperature		Light—Davie	19	Scissors—large	9
Slow—walk		Health—wealth		Quiet—stay	9
Wish—wishbone		Bible—Constance	15	Green—flowers	
River—love	19	Memory—fine	1	Salt—perfume	18
White—Dr. White	17	Sheep—plenty	6	Street—floor	19
Beautiful—pretty	1	Bath—bother	10	King—Haaken	19
Window—dove	19	Cottage—mansion	10	Cheese—kiss	19
Rough—fine	1	Swift—hurry		Blossom—flower	
Citizen—United States		Blue—flowers	2	Afraid—never	
Foot—left	15	Hungry—never			
Spider—web		Priest—highest	2		

CASE No. 17607.—P. D. Test record somewhat approaching the normal: 24 individual reactions, of which 16 are unclassified, mostly "far fetched" and not strictly incoherent. Patient is a well-marked case of dementia præcox but only moderately deteriorated; works well at the hospital.

Table—oak		Needle—steel		Ocean—Atlantic	
Dark—brown		Red—color		Head—statue	15
Music—falsetto	17	Sleep—slumber		Stove—iron	
Sickness—typhoid		Anger—aroused		Long—inches	17
Man—gender	19	Carpet—texture	2	Religion—creed	
Deep—feet	19	Girl—female		Whiskey—hops	
Soft—feeling		High—up		Child—neuter	19
Eating—partaking	19	Working—doing		Bitter—horehound	17
Mountain—hunter	19	Sour—lemon		Hammer—steel	
House—dwelling		Earth—dirt		Thirsty—degree	15
Black—color		Trouble—distress		City—population	
Mutton—sheep		Soldier—uniform	19	Square—sides	
Comfort—coziness	2	Cabbage—crop		Butter—cream	
Hand—anatomy		Hard—metal		Doctor—physician	
Short—stature		Eagle—bird		Loud—noise	
Fruit—apples		Stomach—anatomy		Thief—characterization	19
Butterfly—insect		Stem—pipe		Lion—menagerie	
Smooth—plain		Lamp—glass		Joy—openness	19
Command—order		Dream—atmosphere	19	Bed—furniture	
Chair—furniture		Yellow—color		Heavy—weight	
Sweet—sugar		Bread—flour		Tobacco—plant	
Whistle—steam		Justice—equality		Baby—egg	19
Woman—sex		Boy—male		Moon—astronomy	
Cold—degree		Light—sun		Scissors—blades	
Slow—speedless		Health—color		Quiet—noiseless	
Wish—expression		Bible—nonsense	19	Green—Paris	11
River—Amazon		My—retentiveness	2	Salt—crystal	17
White—pulp	17	Sleep—quadruped		Street—lane	
Beautiful—description		Bath—water		King—usurper	19
Window—opaque	19	Cottage—stories	19	Cheese—milk	
Rough—uncouth		Swift—speed		Blossom—bud	
Citizen—qualification	19	Blue—navy		Afraid—scared	
Foot—anatomy		Hungry—appetite			
Spider—bug		Priest—uniform	15		

CASE No. 5537.—J. H. Test record approaching the normal: 21 individual reactions, 8 classed as normal, 1 non-specific, 12 unclassified, mostly "far fetched" but not strictly incoherent. Well-marked dementia præcox, but of recent origin and but slight deterioration.

Table—eat	Needle—sew	Ocean—commerce
Dark—night	Red—marine	Head—thought
Music—pleasure	Sleep—repose	Stove—iron
Sickness—suffering	Anger—assault	Long—distance
Man—farmer	Carpet—cloth	Religion—belief
Deep—low	Girl—sister	Whiskey—alcohol
Soft—hard	High—above	Child—parent
Eating—life	Working—labor	Bitter—taste
Mountain—earth	Sour—bitter	Hammer—trade
House—dwelling	Earth—farm	Thirsty—beverage
Black—color	Trouble—flight	City—position
Mutton—food	Soldier—duty	Square—block
Comfort—rest	Cabbage—vegetable	Butter—yellow
Hand—limb	Hard—stone	Doctor—profession
Short—small	Eagle—large	Loud—fiddle
Fruit—nourishing	Stomach—body	Thief—police
Butterfly—flower	Stem—leaf	Lion—Africa
Smooth—straight	Lamp—light	Joy—sensation
Command—obey	Dream—unconsciousness	Bed—rest
Chair—furniture	Yellow—flag	Heavy—burden
Sweet—palate	Bread—hunger	Tobacco—store
Whistle—noise	Justice—freedom	Baby—care
Woman—marriage	Boy—school	Moon—atmosphere
Cold—indisposed	Light—electricity	Scissors—dressmaker
Slow—weary	Health—business	Quiet—lonesome
Wish—work	Bible—religion	Green—color
River—tug	Memory—brain	Salt—house
White—sheets	Sheep—pasture	Street—neighborhood
Beautiful—rare	Bath—clean	King—beast
Window—ventilation	Cottage—property	Cheese—merchant
Rough—uneven	Swift—current	Blossom—flowers
Citizen—public	Blue—uniform	Afraid—train
Foot—walk	Hungry—appetite	
Spider—web	Priest—church	

CASE No. 6190.—L. L. Test record not distinguishable from normal. Case of recent onset, with little, if any deterioration.

Table—chair	Needle—cotton	Ocean—ships
Dark—light	Red—brick	Head—mind
Music—note	Sleep—night	Stove—chimney
Sickness—health	Anger—joy	Long—wind
Man—woman	Carpet—cloth	Religion—God
Deep—shallow	Girl—mouth	Whiskey—alcohol
Soft—hard	High—low	Child—mother
Eating—breakfast	Working—idle	Bitter—fruit
Mountain—rock	Sour—vinegar	Hammer—nails
House—chimney	Earth—round	Thirsty—water
Black—white	Trouble—sickness	City—cars
Mutton—animal	Soldier—gun	Square—angles
Comfort—chair	Cabbage—garden	Butter—cow
Hand—foot	Hard—rock	Doctor—sickness
Short—long	Eagle—fly	Loud—noise
Fruit—ripe	Stomach—man	Thief—sinner
Butterfly—fields	Stem—watch	Lion—jungle
Smooth—hard	Lamp—oil	Joy—gladness
Command—army	Dream—sleep	Bed—pillow
Chair—straw	Yellow—sunflower	Heavy—iron
Sweet—bitter	Bread—butter	Tobacco—leaf
Whistle—engine	Justice—peace	Baby—mother
Woman—man	Boy—girl	Moon—stars
Cold—hot	Light—window	Scissors—thread
Slow—fast	Health—man	Salt—room
Wish—desire	Bible—God	Green—grass
River—brook	Memory—mind	Salt—ocean
White—black	Sheep—pasture	Street—men
Beautiful—girl	Bath—water	King—queen
Window—glass	Cottage—trees	Cheese—butter
Rough—smooth	Swift—engine	Blossom—bud
Citizen—city	Blue—sky	Afraid—coward
Foot—ankle	Hungry—bread	
Spider—web	Priest—church	

CASE No. 1278.—B. B. Test record not distinguishable from normal. Case of several years standing, but showing almost complete remission of all symptoms.

Table—chair	Needle—thread	Ocean—sea
Dark—day	Red—white	Head—body
Music—instrument	Sleep—slumber	Stove—iron
Sickness—health	Anger—kindness	Long—length
Man—woman 1	Carpet—mat	Religion—too 12
Deep—thoughts 1	Girl—boy	Whiskey—drink
Soft—apple	High—short	Child—baby
Eating—food	Working—idle	Bitter—taste
Mountain—rock	Sour—sweet	Hammer—nails
House—building	Earth—land	Thirsty—drink
Black—dark	Trouble—sorrow	City—town
Mutton—meat	Soldier—hero	Square—man 1
Comfort—home	Cabbage—turnip	Butter—bread
Hand—from 12	Hard—soft	Doctor—patient
Short—stout 12	Eagle—owl	Loud—howl 17
Fruit—eating	Stomach—head	Thief—steal
Butterfly—bird	Stem—pipe	Lion—bear
Smooth—glossy	Lamp—pipe 19	Joy—happiness 1
Command—general	Dream—sleep	Bed—blanket
Chair—floor	Yellow—brown	Heavy—weight
Sweet—taste	Bread—biscuit	Tobacco—smoke
Whistle—tune	Justice—peaceful 2	Baby—cradle
Woman—man 1	Boy—girl	Moon—sun
Cold—chilly	Light—dark	Scissors—thimble
Slow—fast	Health—well	Quiet—stillness
Wish—something	Bible—book	Green—plaid 17
River—water	Memory—lost 2	Salt—pepper
White—black	Sheep—animal	Street—sidewalk
Beautiful—pretty 1	Bath—wash	King—queen
Window—pane	Cottage—house	Cheese—crackers
Rough—ugly	Swift—movements 2	Blossom—leaf
Citizen—papers	Blue—red	Afraid—frightened
Foot—shoe	Hungry—thirst	
Spider—bug	Priest—minister	

PARANOIC CONDITIONS.

The clinical group of psychoses included under the designation paranoic conditions is far from being homogeneous. We have here cases that are more or less closely allied to the paranoid form of dementia præcox, other cases that are apparently dependent upon involutional changes (Kraepelin's *praeseniler Beeinträchtigungswahn*), still other cases that are characterized by absence or at least delay of mental deterioration, etc.

In some of these cases disturbance of the flow of utterance is not observed, and the test records obtained from them present no striking abnormalities. Distinctly pathological records are obtained mainly from those cases which clinically resemble dementia præcox; in these records the nature of the pathological reactions would seem to indicate that the diagnosis of dementia præcox would be more justifiable than that of paranoic condition.

The following test records will serve to illustrate the types of reactions met with in this group of psychoses:

CASE No. 3039.—F. A. Normal record.

Table—purpose	19	Needle—sewing		Ocean—large	1
Dark—obscure		Red—color		Head—trunk	
Music—pleasant	1	Sleep—bed		Stove—fire	
Sickness—confinement	17	Anger—cross		Long—distance	
Man—twenty-one	12	Carpet—floor		Religion—Christianity ..	
Deep—down		Girl—young		Whiskey—drinkable	
Soft—smooth		High—up		Child—young	
Eating—nourishment		Working—labor		Bitter—bad	1
Mountain—high		Sour—unpleasant	1	Hammer—knock	
House—living		Earth—dirt		Thirsty—dry	
Black—dark		Trouble—worryment		City—government	
Mutton—eating		Soldier—fight		Square—block	
Comfort—pleasant	1	Cabbage—vegetable		Butter—eat	
Hand—limb		Hard—tough		Doctor—cure	
Short—low		Eagle—bird		Loud—noisy	
Fruit—eat		Stomach—anatomy		Thief—steal	
Butterfly—miller		Stem—growth		Lion—animal	
Smooth—soft		Lamp—burn		Joy—pleasant	1
Command—obey		Dream—restlessness		Bed—laying	2
Chair—sitting		Yellow—color		Heavy—weighty	
Sweet—tasting		Bread—eat		Tobacco—smoking	
Whistle—noise		Justice—right		Baby—new-born	17
Woman—female		Boy—young		Moon—planet	
Cold—unpleasant	1	Light—see		Scissors—cutting	
Slow—easy		Health—well		Quiet—easy	
Wish—want		Bible—religion		Green—color	
River—water		Memory—thoughtful		Salt—preservative	2
White—colorless		Sheep—animal		Street—lane	
Beautiful—handsome		Bath—wash		King—monarch	
Window—glass		Cottage—house		Cheese—eatable	
Rough—unpleasant	1	Swift—fast		Blossom—budding	2
Citizen—vote		Blue—color		Afraid—fear	
Foot—limb		Hungry—appetite			
Spider—insect		Priest—Christian	17		

CASE No. 5803.—D. E. D. Slight tendency to give sound reactions.

Table—tree	19	Needle—pin		Ocean—river	
Dark—bright		Red—yellow		Head—neck	
Music—song		Sleep—slumber		Stove—covers	2
Sickness—health		Anger—amiable		Long—short	
Man—woman	1	Carpet—mat		Religion—optional	19
Deep—shallow		Girl—boy		Whiskey—wine	
Soft—hard		High—hill		Child—baby	
Eating—digesting		Working—playing		Bitter—sweet	
Mountain—hill		Sour—sweet		Hammer—gimlet	17
House—horse	10	Earth—land		Thirsty—drink	
Black—red		Trouble—tranquillity	10	City—town	
Mutton—tallow		Soldier—boy		Square—compass	
Comfort—wealth		Cabbage—plant		Butter—butterfly	10
Hand—arm		Hard—easy		Doctor—lawyer	
Short—long		Eagle—bird		Loud—lord	10
Fruit—plate	17	Stomach—bowels		Thief—beggar	
Butterfly—net		Stem—head		Lion—lionesa	
Smooth—surface		Lamp—chimney		Joy—sorrow	
Command—obey		Dream—myth	17	Bed—couch	
Chair—table		Yellow—blue		Heavy—light	
Sweet—sour		Bread—biscuit		Tobacco—cigarette	
Whistle—call		Justice—balance	17	Baby—child	
Woman—lady		Boy—girl		Moon—stars	
Cold—lukewarm	19	Light—gray	17	Scissors—knife	
Slow—not	12	Health—wealth		Quiet—quilt	10
Wish—receive		Bible—prayerbook		Green—envy	
River—lake		Memory—understanding ..		Salt—sewing	19
White—black		Sheep—lamb		Street—lane	
Beautiful—graceful		Bath—swim		King—queen	
Window—door		Cottage—house		Cheese—cracker	
Rough—smooth		Swift—slow		Blossom—flower	
Citizen—city		Blue—yellow		Afraid—courageous	
Foot—leg		Hungry—eat			
Spider—soap	10	Priest—bishop			

CASE No. 2133.—M. F. Unclassified reactions, mostly "far fetched" or incoherent; perseveration.

Table-eat	Needle-Carrie	19	Ocean-spring	15
Dark-night	Red-pink		Head-canary	19
Music-sing	Sleep-awake		Stove-board	
Sickness-sadness	Anger-jolly	19	Long-dishes	13
Man-home	Carpet-curtains		Religion-piano	19
Deep-light	Girl-yellow	19	Whiskey-home	15
Soft-sleep	High-green	14	Child-baby	
Eating-drink	Working-bed	19	Bitter-shoes	19
Mountain-hills	Sour-dishes	19	Hammer-tacks	
House-home	Earth-grapes	13	Thirsty-longing	
Black-stove	Trouble-work	1	City-Flushing	17
Mutton-lamb	Soldier-sing	15	Square-store	10
Comfort-pleasure	Cabbage-potatoes		Butter-butcher	10
Hand-write	Hard-sewing	17	Doctor-hat	19
Short-short-cake	Eagle-daisy	19	Loud-chair	15
Fruit-grapes	Stomach-flowers	18	Thief-picture	19
Butterfly-butter	Stem-vine		Lion-house	13
Smooth-ironing	Lamp-flatiron	19	Joy-gladness	
Command-correct	Dream-sleep		Bed-sleep	
Chair-see	Yellow-awake	13	Heavy-sick	2
Sweet-apples	Bread-children		Tobacco-album	19
Whistle-happiness	Justice-dresses	14	Baby-basket	17
Woman-girl	Boy-mother		Moon-stars	
Cold-warm	Light-dark		Scissors-knife	
Slow-fast	Health-wealth		Quiet-spoon	13
Wish-like	Bible-commands	2	Green-scar	19
River-water	Memory-black	13	Salt-pepper	
White-blue	Sheep-chickens	17	Street-sugar	13
Beautiful-red	Bath-carpet	19	King-blackening	19
Window-light	Cottage-worsted	14	Cheese-meat	
Rough-easy	Swift-silk	18	Blossom-flowers	
Citizen-spring	Blue-cotton	18	Afraid-red	13
Foot-run	Hungry-chair	19		
Spider-fly	Priest-church			

CASE No. 4569.—L. K. Marked stereotypy; unclassified reactions, mostly incoherent.

Table-fruit	Needle-house	6	Ocean-God	6
Dark-light	Red-colors		Head-servant	6
Music-pleasure	Sleep-God	6	Stove-house	
Sickness-illness	Anger-God	5	Long-God	6
Man-parent	Carpet-house		Religion-servant	6
Deep-verse	Girl-God	6	Whiskey-doctor	15
Soft-fruit	High-house		Child-house	6
Eating-illness	Working-parent	6	Bitter-taste	
Mountain-parent	Sour-desire	15	Hammer-household	19
House-privilege	Earth-God	6	Thirsty-drink	
Black-colors	Trouble-God	5	City-God	6
Mutton-parent	Soldier-house	6	Square-touch	19
Comfort-family	Cabbage-desire	15	Butter-taste	
Hand-comfort	Hard-vegetable		Doctor-servant	6
Short-parent	Eagle-animal		Loud-thought	9
Fruit-parent	Stomach-doctor		Thief-slave	19
Butterfly-insect	Stem-growth		Lion-animal	
Smooth-surface	Lamp-house		Joy-pleasure	1
Command-privilege	Dream-God	6	Bed-household	15
Chair-house	Yellow-color		Heavy-weight	
Sweet-dairy	Bread-God	6	Tobacco-doctor	15
Whistle-nature	Justice-fright	19	Baby-care	
Woman-parent	Boy-parent	6	Moon-heavens	
Cold-house	Light-God	6	Scissors-household	15
Slow-light	Health-God	5	Quiet-nerve	19
Wish-desire	Bible-teachings		Green-substance	19
River-house	Memory-teaching	2	Salt-taste	
White-suspicion	Sheep-God	6	Street-heavens	15
Beautiful-house	Bath-cleanness		King-servant	6
Window-light	Cottage-home		Cheese-taste	
Rough-surface	Swift-fear	19	Blossom-sight	19
Citizen-parent	Blue-color		Afraid-fear	
Foot-house	Hungry-appetite			
Spider-insect	Priest-servant			

CASE No. 6164.—L. E. Remarkably persistent tendency to give sound reactions; numerous sound neologisms; no reactions given in response to some of the stimulus words on the ground that she had "no word to match."

Table—witchhazel	10	Needle—dreedle	3	Ocean—notion	10
Dark—frog	19	Red—shred	10	Head—shred	10
Music—lessons	2	Sleep—seef	3	Stove—shove	3
Sickness—badness	2	Anger—	3	Long—song	10
Man—wife	3	Carpet—shloppet	3	Religion—switching	19
Deep—seef	4	Girl—shirl	3	Whiskey—chiston	4
Soft—shoft	3	High—fle	10	Child—kile	3
Eating—feeding	3	Working—shlirking	3	Bitter—shitter	3
Mountain—sounding	10	Sour—bower	10	Hammer—lemon	13
House—shmouse	3	Earth—world	10	Thirsty—frsten	3
Black—fake	19	Trouble—shuttle	19	City—	3
Mutton—shution	3	Soldier—polster	3	Square—birds	19
Comfort—somfort	3	Cabbage—sheffies	4	Butter—shudder	10
Hand—land	10	Hard—shward	3	Doctor—shocter	3
Short—court	10	Eagle—	3	Loud—souse	10
Fruit—shrewd	10	Stomach—	19	Thief—sheaf	10
Butterfly—shuddergy	3	Stem—lamp	19	Lion—Zion	10
Smooth—slude	3	Lamp—sant	4	Joy—bloy	3
Command—noman	3	Dream—leam	3	Bed—wading	19
Chair—sash	19	Yellow—cherry	19	Heavy—shleavy	3
Sweet—leaf	19	Bread—dread	10	Tobacco—confecker	3
Whistle—noshissel	3	Justice—chestnuts	10	Baby—savey	3
Woman—lemon	19	Boy—	3	Moon—shoon	3
Cold—shoal	10	Light—shwife	3	Scissors—	3
Slow—snow	10	Health—felt	2	Quiet—shiet	3
Wish—dish	10	Bible—	3	Green—sheel	4
River—liberty	10	Memory—	19	Salt—shawl	3
White—size	10	Sheep—sheet	10	Street—freet	3
Beautiful—	19	Bath—scab	19	King—sing	10
Window—Hilda	19	Cottage—foppach	3	Cheese—seefs	4
Rough—shoff	3	Swift—shift	10	Blossom—pleasant	9
Citizen—shiffizen	3	Blue—shoe	10	Afraid—shraid	3
Foot—shoot	10	Hungry—angry	19		
Spider—shider	3	Priest—sheaf	19		

CASE No. 3606.—F. W. Neologisms; some particles; many unclassified reactions, mostly incoherent.

Table—pleasure	9	Needle—pleasant	9	Ocean—apology	19
Dark—air	19	Red—permit	19	Head—trinity	19
Music—walking	19	Sleep—indeed	12	Stove—compartment	19
Sickness—gloves	19	Anger—benevolence	19	Long—terminal	19
Man—fields	19	Carpet—disorder	19	Religion—abundant	19
Deep—cortsey	19	Girl—caterer	19	Whiskey—approvement	4
Soft—spoons	19	High—aside	10	Child—anger	15
Eating—oranges	19	Working—among	12	Bitter—courageous	19
Mountain—ice	17	Sour—destroy	19	Hammer—correction	19
House—paintings	2	Earth—confusion	19	Thirsty—afterwards	12
Black—blue	19	Trouble—frivolous	19	City—cataract	19
Mutton—hemisphere	19	Soldier—air	15	Square—plenty	19
Comfort—flowers	19	Cabbage—temptation	19	Butter—accost	19
Hand—sawdust	19	Hard—among	12	Doctor—southern	19
Short—peanuts	19	Eagle—quality	19	Loud—triangular	19
Fruit—autoharp	19	Stomach—debasteur	4	Thief—cannery	19
Butterfly—disease	19	Stem—counteract	19	Lion—practice	19
Smooth—ice	19	Lamp—testament	19	Joy—summons	19
Command—botheration	19	Dream—connexus	4	Bed—avron	4
Chair—tea	19	Yellow—division	19	Heavy—olenthegolis	4
Sweet—arrangement	19	Bread—atherey	4	Tobacco—abundant	15
Whistle—steadfast	19	Justice—anger	19	Baby—parenthus	4
Woman—flowers	15	Boy—quality	15	Moon—otherwise	12
Cold—grandeur	19	Light—among	12	Scissors—cartridge	19
Slow—present	19	Health—frivolous	15	Quiet—outside	12
Wish—mania	19	Bible—permit	15	Green—abounty	4
River—cortsey	15	Memory—usual	19	Salt—calony	4
White—ink	17	Sheep—astray	19	Street—abyss	19
Beautiful—flowers	17	Bath—conscientious	19	King—cavenry	4
Window—air	19	Cottage—texalous	4	Cheese—perplex	19
Rough—enjoyment	19	Swift—patience	19	Blossom—cartridge	15
Citizen—queer	19	Blue—community	19	Afraid—stubborn	19
Foot—hatred	19	Hungry—confusion	15		
Spider—carouay	4	Priest—second	19		

EPILEPSY.

Most of the cases of epilepsy in our collection show advanced dementia and in some the clinical history would indicate also original mental inferiority, that is to say, imbecility or feeble-mindedness.

In these cases the dominant characteristic, so far as shown in the test records, seems to be a narrowing of the mental horizon manifested firstly by a tendency to repeat many times one or another word, and secondly by an abnormally pronounced tendency to make use of non-specific reactions or particles of speech. Occasionally other abnormalities are noted, such as perseveration or distraction.

We submit here copies of some test records.

CASE No. 5410.—W. T. K. Repetition of words previously given; non-specific reactions.

Table—article	1	Needle—article	1	Ocean—body	
Dark—light		Red—color		Head—member	
Music—tone		Sleep—rest		Stove—article	1
Sickness—ill		Anger—condition	6	Long—distance	
Man—person	1	Carpet—covering		Religion—profession	
Deep—distant	2	Girl—female		Whiskey—liquid	
Soft—condition	6	High—distance		Child—person	1
Eating—chew		Working—occupation		Bitter—condition	6
Mountain—high		Sour—condition	6	Hammer—article	1
House—abode		Earth—planet		Thirsty—condition	6
Black—color		Trouble—condition	6	City—place	
Mutton—meat		Soldier—member	6	Square—honest	
Comfort—peace		Cabbage—vegetable	6	Butter—article	6
Hand—limb		Hard—condition	6	Doctor—profession	
Short—distance		Eagle—animal		Loud—sound	
Fruit—result		Stomach—member		Thief—position	15
Butterfly—animal		Stem—branch		Lion—animal	
Smooth—plain		Lamp—article	1	Joy—pleasant	1
Command—order		Dream—thinking	1	Bed—article	6
Chair—seat		Yellow—shade	1	Heavy—weight	
Sweet—pleasant	1	Bread—article	6	Tobacco—plant	
Whistle—sound		Justice—position	19	Baby—person	1
Woman—female		Boy—male		Moon—planet	
Cold—chilly		Light—clear		Scissors—article	1
Slow—pace		Health—condition		Quiet—peaceful	
Wish—desire		Bible—book		Green—shade	
River—body		Memory—condition	6	Salt—article	1
White—clear		Sheep—animal		Street—place	
Beautiful—grand		Bath—position	15	King—ruler	
Window—place	13	Cottage—house		Cheese—article	6
Rough—unsmooth		Swift—fast		Blossom—plant	
Citizen—member	4	Blue—color		Afraid—fear	
Foot—member		Hungry—condition	6		
Spider—animal		Priest—office			

CASE No. 2208.—J. A. Repetition of words previously given; non-specific reactions.

Table-wood	.....
Dark-chairs	.....13
Music-wood	.....14
Sickness-dropsy	.....17
Man-body	.....
Deep-well	.....2
Soft-lady	.....19
Eating-man	.....6
Mountain-hills	.....
House-barns	.....2
Black-horse	.....
Mutton-sheep	.....
Comfort-poison	.....19
Hand-man	.....1
Short-people	.....1
Fruit-trees	.....
Butterfly-tree	.....
Smooth-people	.....6
Command-general	.....
Chair-hands	.....16
Sweet-fruit	.....
Whistle-man	.....1
Woman-people	.....1
Cold-ice	.....
Slow-people	.....6
Wish-dead	.....19
River-lakes	.....
White-foam	.....17
Beautiful-man	.....1
Window-glass	.....
Rough-people	.....6
Citizen-man	.....1
Foot-people	.....6
Spider-barn	.....15

Needle-clothes	.....
Red-blood	.....
Sleep-bed	.....
Anger-angry	.....
Carpet-stores	.....19
Girl-ladies	.....2
High-mountain	.....
Working-people	.....6
Sour-fruit	.....
Earth-clay	.....
Trouble-bad	.....1
Soldier-mar.	.....1
Cabbage-field	.....
Hard-case	.....19
Eagle-bird	.....
Stomach-man	.....1
Stem-pipe	.....
Lamp-fire	.....
Dream-bad	.....1
Yellow-chair	.....15
Bread-rye	.....
Justice-right	.....
Boy-bad	.....1
Light-ship	.....19
Health-pig	.....19
Bible-man	.....6
Memory-mind	.....
Sheep-mutton	.....
Bath-water	.....
Cottage-house	.....
Swift-ship	.....15
Blue-lines	.....17
Hungry-people	.....6
Priest-man	.....1

Ocean-deep	.....
Head-bad	.....9
Stove-wood	.....
Long-trees	.....2
Religion-form	.....19
Whiskey-apples	.....17
Child-people	.....1
Bitter-apples	.....
Hammer-axe	.....
Thirsty-drink	.....
City-towns	.....
Square-measurement	.....
Butter-cows	.....
Doctor-person	.....1
Loud-people	.....1
Thief-person	.....1
Lion-animal	.....
Joy-person	.....9
Bed-man	.....6
Heavy-mountain	.....
Tobacco-growing	.....
Baby-person	.....1
Moon-people	.....6
Scissors-cutting	.....
Quiet-mind	.....
Green-cloud	.....19
Salt-planting	.....13
Street-walk	.....
King-human	.....19
Cheese-milk	.....
Blossom-flowers	.....
Afraid-human	.....15

CASE No. 01218.—E. M. Repetition of words previously given; non-specific reactions.

Table-tablecloth	.....
Dark-dog	.....
Music-figure	.....17
Sickness-drink	.....17
Man-people	.....1
Deep-pull	.....19
Soft-light	.....
Eating-think	.....1
Mountain-well	.....13
House-plumber	.....17
Black-horse	.....
Mutton-park	.....19
Comfort-nice	.....1
Hand-use	.....1
Short-long	.....
Fruit-figs	.....
Butterfly-cloth	.....19
Smooth-nice	.....1
Command-pleasant	.....6
Chair-wash	.....19
Sweet-sour	.....
Whistle-mug	.....19
Woman-pear	.....19
Cold-warm	.....
Slow-quickness	.....
Wish-nice	.....1
River-pleasant	.....1
White-use	.....6
Beautiful-comfort	.....19
Window-looks	.....2
Rough-pleasant	.....6
Citizen-comfort	.....15
Foot-help	.....
Spider-wake	.....19

Needle-use	.....1
Red-look	.....15
Sleep-good	.....1
Anger-no	.....12
Carpet-make	.....19
Girl-happy	.....9
High-nice	.....6
Working-pleasant	.....1
Sour-bag	.....19
Earth-ground	.....
Trouble-good	.....6
Soldier-clothes	.....
Cabbage-eat	.....
Hard-good	.....1
Eagle-pleasant	.....6
Stomach-hurt	.....
Stem-use	.....1
Lamp-lighted	.....
Dream-pleasant	.....1
Yellow-wake	.....15
Bread-making	.....
Justice-help	.....
Boy-pleasant	.....6
Light-big	.....19
Health-nice	.....6
Bible-use	.....1
Memory-no	.....12
Sheep-pleasant	.....6
Bath-good	.....1
Cottage-useful	.....6
Swift-quick	.....
Blue-good	.....1
Hungry-sour	.....15
Priest-good	.....1

Ocean-useful	.....6
Head-nice	.....6
Stove-lighted	.....2
Long-lake	.....19
Religion-pleasant	.....6
Whiskey-use	.....6
Child-help	.....6
Bitter-sour	.....
Hammer-stick	.....19
Thirsty-drink	.....
City-handy	.....19
Square-pleasant	.....6
Butter-useful	.....1
Doctor-help	.....
Loud-make	.....15
Thief-punish	.....2
Lion-bad	.....9
Joy-happy	.....1
Bed-pleasant	.....1
Heavy-light	.....
Tobacco-pleasant	.....1
Baby-help	.....6
Moon-sun	.....6
Scissors-pleasant	.....6
Quiet-sleep	.....
Green-beans	.....10
Salt-handy	.....15
Street-make	.....6
King-nice	.....15
Cheese-good	.....6
Blossom-pleasant	.....1
Afraid-will	.....19

CASE No. 4989.—C. H. Repetition of words previously given; non-specific reactions; particles.

Table—work	1	Needle—steel		Ocean—three	12
Dark—true	19	Red—color		Head—good	1
Music—pleasant	1	Sleep—plenty		Stove—burning	
Sickness—well		Anger—never		Long—medium	
Man—absent	19	Carpet—floor		Religion—willing	15
Deep—together	12	Girl—five	12	Whiskey—some	19
Soft—plenty	6	High—medium		Child—good	1
Eating—good	1	Working—always		Bitter—never	6
Mountain—together	12	Sour—never	6	Hammer—tool	
House—one	12	Earth—cultivate	17	Thirsty—seldom	6
Black—America	19	Trouble—none		City—New York	
Mutton—vegetable	2	Soldier—willing	15	Square—always	6
Comfort—sleep		Cabbage—vegetable		Butter—good	1
Hand—nothing	19	Hard—seldom	12	Doctor—good	1
Short—never	12	Eagle—American		Loud—medium	6
Fruit—vegetable		Stomach—no	12	Thief—none	
Butterfly—bird		Stem—one	12	Lion—animal	
Smooth—large	9	Lamp—burning		Jov—plenty	6
Command—willing		Dream—always	6	Bed—good	1
Chair—good	6	Yellow—sometimes	12	Heavy—medium	6
Sweet—always	6	Bread—soft		Tobacco—yes	12
Whistle—music		Justice—always		Baby—more	19
Woman—one	12	Boy—two	12	Moon—bright	
Cold—medium	6	Light—plenty		Scissors—sharp	
Slow—quick		Health—plenty		Quiet—plenty	6
Wish—hope		Bible—Catholic	17	Green—good	6
River—lake		Memory—good	1	Salt—little	19
White—always	6	Sheep—wool		Street—lots	18
Beautiful—medium	6	Bath—good	1	King—none	
Window—open		Cottage—plenty	6	Cheese—seldom	6
Rough—smooth		Swift—medium	6	Blossom—always	6
Citizen—American		Blue—never	6	Afraid—sometimes	15
Foot—two		Hungry—seldom	6		
Spider—butterfly		Priest—good	1		

CASE No. 4847.—C. C. Distraction.

Table—eat		Needle—scissors	17	Ocean—beans	19
Dark—lock	10	Red—blue		Head—prunes	18
Music—fiddle		Sleep—pink	13	Stove—cook	
Sickness—doctors	2	Anger—box	19	Long—fig	19
Man—woman	1	Carpet—rug		Religion—church	
Deep—water		Girl—boy		Whiskey—tea	17
Soft—snow		High—play		Child—people	1
Eating—oats	17	Working—cup	19	Bitter—stomach	19
Mountain—spray	19	Sour—bread	17	Hammer—tack	
House—building		Earth—picture	19	Thirsty—peach	15
Black—red	15	Trouble—soap	19	City—box	15
Mutton—meat	9	Soldier—towel	18	Square—soap	15
Comfort—red	15	Cabbage—turnip		Butter—lard	
Hand—people	9	Hard—tree		Doctor—sick	
Short—world	19	Eagle—clock	19	Loud—head	19
Fruit—age	13	Stomach—eat		Thief—cup	15
Butterfly—bird		Stem—soap	15	Lion—bottle	15
Smooth—eggs	18	Lamp—oil		Joy—pitcher	19
Command—cake	19	Dream—glass	13	Bed—sheet	
Chair—world	15	Yellow—bottle	18	Heavy—blanket	13
Sweet—cherries		Bread—soap	15	Tobacco—mustard	19
Whistle—peaches	18	Justice—pencil	19	Baby—pepper	18
Woman—children		Boy—picture	15	Moon—heater	19
Cold—summer	17	Light—darkness		Scissors—string	
Slow—brother	19	Health—washstand	19	Quiet—lace	19
Wish—pear	19	Bible—book		Green—red	
River—orange	18	Memory—saucer	19	Salt—soda	17
White—black		Sheep—chair	19	Street—soldier	19
Beautiful—red	13	Bath—bureau	14	King—box	15
Window—door		Cottage—pan	19	Cheese—cake	
Rough—table		Swift—towel	15	Blossom—shell	19
Citizen—couch	19	Blue—wash	2	Afraid—blotter	19
Foot—arm		Hungry—eat			
Spider—fly		Priest—church			

CASE No. 3597.—L. T. Some neologisms, all possessing obvious meaning.

Table—stand	Needle—pin	Ocean—sea
Dark—light	Red—blue	Head—topness 4
Music—instrument	Sleep—awake	Stove—cooking
Sickness—health	Anger—patient 2	Long—shorter 2
Man—female	Carpet—rug	Religion—wickedness ...
Deep—deftableness 4	Girl—servant	Whiskey—medicine
Soft—hard	High—low	Child—daughter
Eating—starving	Working—laziness	Bitter—sweetness 2
Mountain—isthmus .....17	Sour—sweet	Hammer—pickaxe .....17
House—building	Earth—hemisphere	Thirsty—drinkness 4
Black—white	Trouble—goodness 9	City—village
Mutton—beef	Soldier—merchant .....17	Square—straightness 2
Comfort—patient	Cabbage—pumpkin .....17	Butter—syrup .....17
Hand—leg	Hard—tight	Doctor—queen .....19
Short—long	Eagle—hawk	Loud—low
Fruit—vegetable	Stomach—abdomen	Thief—burglar
Butterfly—spider	Stem—leaf	Lion—tiger
Smooth—coarse	Lamp—lantern	Joy—enjoyable 2
Command—thought 1	Dream—nightmare	Bed—bedstead
Chair—utensil .....19	Yellow—lavender .....17	Heavy—lightness
Sweet—sour	Bread—pastry	Tobacco—sweetness 2
Whistle—trumpet	Justice—badness 2	Baby—infant
Woman—man 1	Boy—child	Moon—sun
Cold—warm	Light—darkness	Scissors—shears 4
Slow—quick	Health—sickness	Quiet—noisiness 4
Wish—command	Bible—testament	Green—greenbill 3
River—lake	Memory—remember	Salt—sugar
White—black	Sheep—lamb	Street—Island .....19
Beautiful—pretty 1	Bath—dirtiness 2	King—nephew .....19
Window—door	Cottage—building	Cheese—curdness 4
Rough—straight	Swift—quickly	Blossom—bud
Citizen—tramp .....19	Blue—redness 2	Afraid—knowledgeable .. 4
Foot—arm	Hungry—starving	
Spider—fly	Priest—minister	

GENERAL PARESIS.

Cases presenting no considerable dementia or confusion and cases in a state of remission are apt to give normal test records. As we proceed from the records of such cases to those of cases showing mental deterioration we observe a gradual reduction in the values of reactions, contraction of the mental horizon,¹ and the appearance of the phenomenon of perseveration. We submit the following test records for illustration:

¹ What we mean by contraction of the mental horizon has already been described in connection with epilepsy, page 182.

CASE No. 4047.—C. A. F. Almost complete remission of all mental symptoms. Normal record.

Table—dish	Needle—sharp	Ocean—sea
Dark—light	Red—color	Head—top
Music—sound	Sleep—slumber	Stove—fire
Sickness—disease	Anger—rage	Long—short
Man—woman	Carpet—sweep	Religion—holy
Deep—fathomless	Girl—maiden	Whiskey—drink
Soft—sweet	High—lofty	Child—infant
Eating—food	Working—tolling	Bitter—sour
Mountain—high	Sour—distasteful	Hammer—knock
House—barn	Earth—ground	Thirsty—drink
Black—color	Trouble—sorrow	City—town
Mutton—meat	Soldier—fighter	Square—round
Comfort—ease	Cabbage—leaf	Butter—eat
Hand—foot	Hard—easy	Doctor—physician
Short—long	Eagle—fly	Loud—knock
Fruit—sweet	Stomach—food	Thief—steal
Butterfly—moth	Stem—petal	Lion—tiger
Smooth—rough	Lamp—light	Joy—happiness
Command—order	Dream—slumber	Bed—sleep
Chair—leg	Yellow—color	Heavy—weigh
Sweet—pleasant	Bread—eat	Tobacco—smoke
Whistle—sound	Justice—judgment	Baby—child
Woman—female	Boy—youth	Moon—stars
Cold—ice	Light—lamp	Scissors—cut
Slow—languid	Health—nature	Quiet—soft
Wish—desire	Bible—holy	Green—color
River—long	Memory—remember	Salt—food
White—color	Sheep—lamb	Street—lane
Beautiful—fair	Bath—water	King—queen
Window—glass	Cottage—house	Cheese—eat
Rough—smooth	Swift—fast	Blossom—flower
Citizen—voter	Blue—color	Afraid—fear
Foot—toe	Hungry—famished	
Spider—fly	Priest—holly	

CASE No. 6660.—F. F. Repetition of words previously given; non-specific reactions; unclassified reactions some of which are "circumstantial" (see page 16).

Table—bureau	Needle—sew	Ocean—boats
Dark—boats	Red—nice	Head—brains
Music—piano	Sleep—rest	Stove—heat
Sickness—doctor	Anger—cross	Long—streets
Man—sober	Carpet—good	Religion—Catholic
Deep—cellar	Girl—nice	Whiskey—bad
Soft—easy	High—good	Child—good
Eating—chewing	Working—well	Bitter—sorrow
Mountain—climb	Sour—bitter	Hammer—use
House—tenants	Earth—property	Thirsty—drink
Black—color	Trouble—fighting	City—Brooklyn
Mutton—meat	Soldier—good	Square—parks
Comfort—easy	Cabbage—eat	Butter—ice
Hand—use	Hard—sorry	Doctor—cure
Short—stump	Eagle—good	Loud—holler
Fruit—nice	Stomach—good	Thief—no
Butterfly—like	Stem—fair	Lion—no
Smooth—clean	Lamp—use	Joy—hope
Command—faithful	Dream—now	Bed—rest
Chair—easy	Yellow—color	Heavy—load
Sweet—like	Bread—good	Tobacco—good
Whistle—good	Justice—fine	Baby—good
Woman—like	Boy—good	Moon—light
Cold—medicine	Light—good	Scissors—use
Slow—I	Health—right	Quiet—good
Wish—like	Bible—home	Green—nice
River—boats	Memory—good	Salt—use
White—sheet	Sheep—like	Street—nice
Beautiful—flowers	Bath—good	King—right
Window—red	Cottage—fine	Cheese—nice
Rough—streets	Swift—go	Blossom—grow
Citizen—honest	Blue—nice	Afraid—no
Foot—walking	Hungry—bad	
Spider—kill	Priest—Father	

CASE No. 6185.—R. N. Numerous particles of speech; some unclassified reactions, chiefly "circumstantial" (see page 16).

Table—eat	Needle—sewing	Ocean—water
Dark—cloudy	Red—blue	Head—human
Music—fond	Sleep—nap	Stove—coal
Sickness—well	Anger—willing	Long—short
Man—human	Carpet—yes	Religion—yes
Deep—ocean	Girl—nature	Whiskey—no
Soft—fine	High—low	Child—baby
Eating—yes	Working—artist	Bitter—sweet
Mountain—yes	Sour—sweet	Hammer—pincher
House—yes	Earth—world	Thirsty—drinking
Black—yes	Trouble—peaceful	City—population
Mutton—yes	Soldier—no	Square—circle
Comfort—yes	Cabbage—vegetable	Butter—lard
Hand—finger	Hard—soft	Doctor—physician
Short—yes	Eagle—American	Loud—low
Fruit—yes	Stomach—condition	Thief—penalty
Butterfly—yes	Stem—post	Lion—liar
Smooth—even	Lamp—light	Joy—welcome
Command—obey	Dream—thinking	Bed—sleep
Chair—settle	Yellow—green	Heavy—light
Sweet—bitter	Bread—loaf	Tobacco—yes
Whistle—can't	Justice—yes	Baby—human
Woman—lady	Boy—human	Moon—natural
Cold—ice	Light—heaven	Scissors—no
Slow—fast	Health—wealth	Quiet—yes
Wish—give	Bible—yes	Green—shade
River—enjoyment	Memory—yes	Salt—eat
White—black	Sheep—animal	Street—town
Beautiful—yes	Bath—yes	King—ruler
Window—pane	Cottage—yes	Cheese—eat
Rough—smooth	Swift—fast	Blossom—blooming
Citizen—yes	Blue—gray	Afraid—scared
Foot—one	Hungry—no	
Spider—yes	Priest—yes	

CASE No. 6518.—C. Z. Perseveration shown by numerous instances of association to preceding reaction.

Table—horse	Needle—pin	Ocean—mother
Dark—wren	Red—blue	Head—brother
Music—lark	Sleep—awake	Stove—sister
Sickness—cold	Anger—bad	Long—freedom
Man—woman	Carpet—sweeper	Religion—smart
Deep—sea	Girl—boy	Whiskey—wine
Soft—hard	High—low	Child—lamb
Eating—drinking	Working—playing	Bitter—goat
Mountain—fountain	Sour—sweet	Hammer—nails
House—barn	Earth—ground	Thirsty—dry
Black—stable	Trouble—wheelbarrow	City—talking
Mutton—cow	Soldier—Mexican	Square—inches
Comfort—horse	Cabbage—potatoes	Butter—cheese
Hand—lamb	Hard—beets	Doctor—bread
Short—calf	Eagle—carrots	Loud—oranges
Fruit—apples	Stomach—peas	Thief—almonds
Butterfly—oranges	Stem—peas	Lion—apples
Smooth—peaches	Lamp—burning	Joy—grapes
Command—plums	Dream—happy	Bed—peaches
Chair—bench	Yellow—blue	Heavy—cranberries
Sweet—sugar	Bread—green	Tobacco—grapes
Whistle—drum	Justice—freedom	Baby—watermelons
Woman—man	Boy—girl	Moon—muskmelons
Cold—hot	Light—burning	Scissors—citrons
Slow—fast	Health—strength	Quiet—squashes
Wish—who	Bible—prayerbook	Green—pumpkins
River—water	Memory—thoughts	Salt—cucumbers
White—blue	Sheep—lamb	Street—tomatoes
Beautiful—splendid	Bath—water	King—pears
Window—sashes	Cottage—house	Cheese—apples
Rough—ready	Swift—whist	Blossom—cherries
Citizen—Brooklyn	Blue—red	Afraid—gooseberries
Foot—shoe	Hungry—eating	
Spider—web	Priest—Father	

CASE No. 5329.—B. W. Perseveration; record almost entirely made up of instances of association to preceding reaction.

Table—San Francisco ..19	Needle—Texas ..18	Ocean—lake ..13
Dark—comprehensible ..19	Red—North Carolina ..18	Head—bay ..13
Music—singing ..19	Sleep—Florida ..18	Stove—sound ..18
Sickness—Brooklyn ..19	Anger—Seattle ..18	Long—Island ..18
Man—woman ..1	Carpet—Nevada ..18	Religion—Boston ..18
Deep—amazing ..19	Girl—Iowa ..15	Whiskey—Harvard ..18
Soft—pleasant ..9	High—Virginia ..18	Child—Yale ..18
Eating—digesting ..17	Working—Louisiana ..18	Bitter—Columbia ..18
Mountain—gulf ..17	Sour—Hawaii ..18	Hammer—library ..18
House—peninsula ..18	Earth—Connecticut ..18	Thirsty—Carnegie ..18
Black—Constantinople ..18	Trouble—Rhode Island ..18	City—Rockefeller ..18
Mutton—Bermuda ..18	Soldier—Vermont ..18	Square—Harriman ..18
Comfort—Los Angeles ..18	Cabbage—Massachusetts ..18	Butter—Leggett ..18
Hand—Cuba ..18	Hard—Hudson ..18	Doctor—Lincoln ..18
Short—cities ..18	Eagle—East River ..18	Loud—Roosevelt ..18
Fruit—Iowa ..18	Stomach—Staten Island ..18	Thief—Taft ..18
Butterfly—England ..18	Stem—Kings Park ..18	Lion—Gaynor ..18
Smooth—Russia ..18	Lamp—Fort Lee ..18	Joy—Slocum ..18
Command—Turkey ..18	Dream—Long Island ..18	Bed—Grant ..18
Chair—Manila ..18	Yellow—Greenport ..18	Heavy—McClellan ..18
Sweet—Porto Rico ..18	Bread—Southold ..18	Tobacco—Spain ..19
Whistle—Washington ..18	Justice—Northport ..18	Baby—New London ..18
Woman—Cincinnati ..18	Boy—New Jersey ..18	Moon—Newburgh ..18
Cold—Pittsburg ..18	Light—Rome ..18	Scissors—Troy ..18
Slow—Philadelphia ..18	Health—Italy ..18	Quiet—Schenectady ..18
Wish—Milwaukee ..18	Bible—Episcopal ..17	Green—Lake George ..18
River—St. Louis ..18	Memory—Methodist ..18	Salt—Vienna ..18
White—Japan ..18	Sheep—Congregational ..18	Street—Alsace Lorraine ..18
Beautiful—China ..18	Bath—Baptist ..18	King—Garfield ..17
Window—Berlin ..18	Cottage—minister ..18	Cheese—McKinley ..18
Rough—Glasgow ..18	Swift—physician ..18	Blossom—Bryan ..18
Citizen—London ..18	Blue—horse ..13	Afraid—Blaine ..18
Foot—Dublin ..18	Hungry—cow ..18	
Spider—Sacramento ..18	Priest—Catholics ..18	

MANIC-DEPRESSIVE INSANITY.

In this disorder the departures from the normal seem to be less pronounced than in the psychoses considered above. The number of individual reactions is in most cases not greatly above the normal average; and, so far as their character is concerned, we find that many of them are classed as normal, in accordance with the appendix to the frequency tables; among the unclassified reactions, which are quite frequent here, we find mostly either obviously normal ones, or some of the type to which we have already referred as "far-fetched," while others among them are "circumstantial" (see p. 16); further we find that most of the remaining individual reactions fall into the general group of partial dissociation: non-specific reactions, sound reactions, word complements, and particles.

In some cases the only abnormality that is found is that of an undue tendency to respond by non-specific reactions, most of them being common and there being no excessive number of individual reactions. It would seem legitimate to assume that this tendency

is here to be regarded as a manifestation of the phenomenon which is clinically described as *dearth of ideas*. It is significant that this tendency is observed not only in depressive phases of the psychosis, but also in manic phases and even in the normal intervals of recurrent cases or after apparent recovery in acute cases; this will be seen from some of the test records which are here reproduced.

Occasionally cases are met with which give a large number of unclassified reactions, seemingly incoherent. There can be no doubt that at least some of these cases are clinically perfectly typical ones of manic-depressive insanity, yet the test records strongly resemble, in some respects, those of dementia præcox. Since clinically the distinction between typical cases of these psychoses can be so clearly made on the basis of the disorders of the flow of thought respectively characterizing them, it could hardly be assumed that the associational disturbances in these two groups of cases are truly related, although there may be an apparent resemblance; it must be acknowledged that we are here confronted with one of the most serious shortcomings of the association test, or at least of the present method of applying it.

CASE NO. 5236.—M. B. Depressive attack. Normal record.

Table—eat	Needle—sew	Ocean—water
Dark—night	Red—color	Head—body
Music—play	Sleep—rest	Stove—fire
Sickness—death	Anger—badness	Long—tall
Man—health .....13	Carpet—floor	Religion—teaching
Deep—depth	Girl—young	Whiskey—drink
Soft—hard	High—low	Child—young
Eating—chewing	Working—busy	Bitter—sweet
Mountain—high	Sour—sweet	Hammer—nail
House—living	Earth—live	Thirsty—drink
Black—color	Trouble—grief	City—town
Mutton—sheep	Soldier—army	Square—four
Comfort—kind .....2	Cabbage—garden	Butter—eat
Hand—body	Hard—stone	Doctor—medicine
Short—small .....1	Eagle—bird	Loud—noise
Fruit—garden	Stomach—body	Thief—steal
Butterfly—spring	Stem—plant	Lion—beast
Smooth—rough	Lamp—light	Joy—kind .....6
Command—obey	Dream—sleep	Bed—sleep
Chair—sit	Yellow—color	Heavy—weight
Sweet—apple	Bread—eat	Tobacco—smoke
Whistle—music	Justice—kind .....2	Baby—mother
Woman—kind	Boy—young	Moon—light
Cold—chilly	Light—day	Scissors—cut
Slow—easy	Health—strength	Quiet—kind .....6
Wish—want	Bible—Christ	Green—grass
River—water	Memory—think .....1	Salt—table
White—color	Sheep—mutton	Street—walk
Beautiful—grand	Bath—clean	King—government
Window—light	Cottage—live	Cheese—eat
Rough—smooth	Swift—run	Blossom—tree
Citizen—man .....1	Blue—color	Afraid—coward
Foot—body	Hungry—food	
Spider—animal	Priest—clergy	

CASE No. 6120.—M. L. Maniacal attack. Fifteen individual reactions, of which 11 are classed as normal in accordance with the appendix to the frequency tables.

Table—chair	Needle—doctor	19	Ocean—sea
Dark—light	Red—white		Head—neck
Music—chorus	Sleep—well		Stove—electricity
Sickness—health	Anger—passion		Long—broad
Man—woman	Carpet—cloth		Religion—Presbyterian ..
Deep—around	Girl—boy		Whiskey—medicinal ..
Soft—light	High—low		Child—boy
Eating—food	Working—pleasure	1	Bitter—sweet
Mountain—valley	Sour—sweet		Hammer—saw
House—flat	Earth—heaven		Thirsty—water
Black—white	Trouble—anger		City—Middletown
Mutton—beef	Soldier—mine	12	Square—Madison
Comfort—disease	Cabbage—steak	17	Butter—bread
Hand—legs	Hard—soft		Doctor—love
Short—tall	Eagle—parrot		Loud—soft
Fruit—grapes	Stomach—pelvis	17	Thief—burglar
Butterfly—birds	Stem—flowers		Lion—animal
Smooth—rough	Lamp—light		Joy—ecstasy
Command—president	Dream—empty	17	Red—couch
Chair—assemblyman	Yellow—black		Heavy—lead
Sweet—bitter	Bread—brown		Tobacco—smoke
Whistle—birds	Justice—done		Baby—boy
Woman—man	Boy—baby		Moon—stars
Cold—warm	Light—heaven		Scissors—cotton
Slow—fast	Health—wealth		Quiet—noisy
Wish—well	Bible—love		Green—yellow
River—mountain	Memory—remembrance		Salt—pepper
White—red	Sheep—goat		Street—Dean
Beautiful—heaven	Bath—water		King—God
Window—door	Cottage—house		Cheese—Roquefort
Rough—smooth	Swift—slow		Blossom—apple
Citizen—naturalization	Blue—green		Afraid—never
Foot—hand	Hungry—I		
Spider—bug	Priest—minister		

CASE No. 6367.—J. N. Depressive attack. Only two individual reactions, both classed as normal; undue tendency to give non-specific reactions.

Table—cup	Needle—thread		Ocean—water
Dark—light	Red—blue		Head—arm
Music—song	Sleep—rest		Stove—warm
Sickness—pain	Anger—passion		Long—short
Man—child	Carpet—rug		Religion—good
Deep—high	Girl—child		Whiskey—none
Soft—hard	High—low		Child—good
Eating—tasting	Working—labor		Bitter—sour
Mountain—valley	Sour—sweet		Hammer—noise
House—room	Earth—ground		Thirsty—water
Black—white	Trouble—overcome	17	City—country
Mutton—lamb	Soldier—brave		Square—round
Comfort—peace	Cabbage—lettuce		Butter—salt
Hand—foot	Hard—soft		Doctor—good
Short—long	Eagle—bird		Loud—noise
Fruit—apple	Stomach—heart		Thief—man
Butterfly—moth	Stem—tree		Lion—beast
Smooth—rough	Lamp—light		Joy—good
Command—obey	Dream—sleep		Bed—good
Chair—table	Yellow—red		Heavy—weight
Sweet—sour	Bread—roll		Tobacco—smoke
Whistle—song	Justice—peace		Baby—child
Woman—love	Boy—child		Moon—sun
Cold—warm	Light—sun		Scissors—knife
Slow—fast	Health—wealth	1	Quiet—rest
Wish—well	Bible—good	1	Green—red
River—water	Memory—good	1	Salt—water
White—black	Sheep—lamb		Street—city
Beautiful—grand	Bath—water		King—man
Window—glass	Cottage—house		Cheese—butter
Rough—smooth	Swift—fast		Blossom—flower
Citizen—man	Blue—white		Afraid—fear
Foot—hand	Hungry—eat		
Spider—fly	Priest—man	1	

CASE No. 5162.—W. H. Recurrent attacks, mixed in character; at time of test patient was in a normal interval. 5 individual reactions, of which 1 is classed as normal, 1 as a derivative, 2 as non-specific, and 1 as a sound reaction; undue tendency to give non-specific (common) reactions.

Table—comfort	Needle—sharpness	Ocean—sailing
Dark—darkness 8	Red—blood	Head—thinking 1
Music—pleasure 1	Sleep—comfort	Stove—warmth
Sickness—sorrow	Anger—passion	Long—length
Man—manners 10	Carpet—walking	Religion—holiness
Deep—thought 1	Girl—lovely	Whiskey—badness 2
Soft—comfort	High—height	Child—pleasure 1
Eating—pleasure 1	Working—business	Bitter—sourness
Mountain—height	Sour—tart	Hammer—pounding
House—comfort	Earth—planting	Thirsty—drinking
Black—darkness	Trouble—sorrow	City—town
Mutton—eating	Soldier—fighting	Square—measure
Comfort—pleasure 1	Cabbage—eating	Butter—greasy
Hand—useful 1	Hard—harshness 2	Doctor—medicine
Short—stumpy	Eagle—flying	Loud—hearing 2
Fruit—eating	Stomach—eating	Thief—stealing
Butterfly—handsome	Stem—vine	Lion—fierceness
Smooth—plane	Lamp—lighting 2	Joy—pleasure 1
Command—ordering	Dream—pleasure 1	Bed—sleeping
Chair—easy	Yellow—color	Heavy—solid
Sweet—candy	Bread—eating	Tobacco—pleasure 1
Whistle—noise	Justice—suing 17	Baby—loveliness
Woman—love	Boy—children	Moon—bright
Cold—freezing	Light—seeing	Scissors—sharpness
Slow—laziness	Health—pleasure 1	Quiet—pleasure 1
Wish—good 1	Bible—thinking 9	Green—color
River—water	Memory—recollections ..	Salt—taste
White—clearness 2	Sheep—wool	Street—walking
Beautiful—handsome ..	Bath—pleasure 1	King—majestic
Window—scene	Cottage—living	Cheese—eating
Rough—harshness	Swift—quickness	Blossom—handsome
Citizen—voting	Blue—sky	Afraid—fear
Foot—stepping	Hungry—pleasure 9	
Spider—poison	Priest—holiness	

CASE No. 6279.—A. F. Maniacal attack; at time of test patient had improved, though not recovered. Non-specific reactions; particles. (Patient does not speak English with perfect fluency.)

Table—board	Needle—steel	Ocean—Grove
Dark—night	Red—rose	Head—black
Music—piano	Sleep—well	Stove—shine 19
Sickness—appendicitis ..	Anger—not	Long—square
Man—husband	Carpet—beauty 1	Religion—no
Deep—hole	Girl—love	Whiskey—champagne ... 17
Soft—hard	High—reason 19	Child—my 2
Eating—vegetable	Working—dress 19	Bitter—pepper
Mountain—country	Sour—vinegar	Hammer—knock
House—comfort	Earth—ground	Thirsty—no 12
Black—cotton 17	Trouble—much	City—New York
Mutton—lamb	Soldier—blue	Square—table
Comfort—rest	Cabbage—sour	Butter—good 1
Hand—arm	Hard—no 12	Doctor—S 17
Short—journey	Eagle—paper	Loud—talk
Fruit—apples	Stomach—well 17	Thief—night
Butterfly—love 13	Stem—flower	Lion—yes 12
Smooth—nice 1	Lamp—light	Joy—good 1
Command—order	Dream—awful 19	Bed—comfort
Chair—down 12	Yellow—flower	Heavy—iron
Sweet—sugar	Bread—rye	Tobacco—strong
Whistle—blow	Justice—court	Baby—love
Woman—good 1	Boy—little	Moon—shine
Cold—ice	Light—room	Scissors—cut
Slow—lary	Health—love 15	Quiet—well
Wish—home	Bible—no 12	Green—bow 17
River—boat	Memory—good 1	Salt—bitter
White—milk	Sheep—lot 19	Street—Hinsdale 17
Beautiful—flowers	Bath—cold	King—Franz Joseph ... 17
Window—corner	Cottage—little	Cheese—Swiss
Rough—man 1	Swift—kick 17	Blossom—nice 1
Citizen—not 12	Blue—no 12	Afraid—no
Foot—short	Hungry—no	
Spider—don't 12	Priest—love 15	

CASE No. 4578.—E. M. Circular insanity of over twenty years' standing; at time of test patient was in a manic phase. Non-specific reactions; doubtful reactions; neologisms, all possessing obvious meaning.

Table—using	1	Needle—article	1	Ocean—water	
Dark—unbright	4	Red—color		Head—body	
Music—songs		Sleep—tiredness	4	Stove—article	1
Sickness—catching	17	Anger—scolding		Long—shortly	2
Man—masculine		Carpet—article	1	Religion—Bible	
Deep—high		Girl—female	1	Whiskey—drinking	
Soft—chew	19	High—low		Child—disremembering	4
Eating—sometimes	12	Working—do		Bitter—taste	
Mountain—highlands		Sour—tasting		Hammer—using	1
House—live		Earth—surface		Thirsty—drinking	
Black—color		Trouble—worryment		City—acting	15
Mutton—meat		Soldier—man	1	Square—measuring	2
Comfort—easy		Cabbage—vegetable		Butter—food	
Hand—body		Hard—difficult		Doctor—helping	2
Short—unlongly	4	Eagle—bird		Loud—hearing	2
Fruit—plants		Stomach—body		Thief—untrue	15
Butterfly—insects		Stem—article	6	Lion—animal	
Smooth—feeling		Lamp—article	1	Joy—gladness	
Command—do		Dream—untrue	4	Bed—lying	
Chair—use	1	Yellow—color		Heavy—unlightly	4
Sweet—taste		Bread—food		Tobacco—using	1
Whistle—act		Justice—unfairly	2	Baby—born	4
Woman—female		Boy—masculine		Moon—sending	19
Cold—acting	2	Light—easy		Scissors—using	1
Slow—gradually	17	Health—sickness		Quiet—acting	2
Wish—desire		Bible—commandments		Green—color	
River—water		Memory—remember		Salt—food	
White—color		Sheep—animal		Street—walking	
Beautiful—niceness	2	Bath—cleanness		King—person	1
Window—built	19	Cottage—country		Cheese—food	
Rough—treatment	17	Swift—quickly		Blossom—plant	
Citizen—country		Blue—color		Afraid—frightened	
Foot—body		Hungry—food			
Spider—insect		Priest—masculine	15		

CASE No. 5878.—A. B. Maniacal attack. 48 individual reactions, of which 18 are classed as normal, 10 are sound reactions (2 sound neologisms), 1 word complement, 8 particles, and 11 unclassified reactions most of which are either obviously normal or "far fetched" but not strictly incoherent.

Table—mahogany		Needle—tailor		Ocean—Niagara	17
Dark—green		Red—herald	10	Head—rest	
Music—masonic	10	Sleep—seven	12	Stove—stationary	10
Sickness—seasickness	10	Anger—Angoria	3	Long—poems	19
Man—maternity	10	Carpet—green		Religion—Catholic	
Deep—well		Girl—eighteen	12	Whiskey—Hunter	
Soft—silk		High—school	11	Child—Jesus	17
Eating—cleanliness	19	Working—ten	12	Bitter—gall	
Mountain—Gibraltar	17	Sour—kraut		Hammer—steel	
House—bungalow		Earth—round		Thirsty—water	
Black—light		Trouble—son	19	City—New York	
Mutton—lamb		Soldier—navy		Square—Union	
Comfort—linen	17	Cabbage—curly	19	Butter—sweet	
Hand—left	17	Hard—stone		Doctor—S	17
Short—shorthand	10	Eagle—almanac	17	Loud—discreet	19
Fruit—pears		Stomach—stomach	3	Thief—night	
Butterfly—canary	17	Stem—maple	17	Lion—Bostock	2
Smooth—linen	17	Lamp—New York	19	Joy—Joy Line	10
Command—pilot	17	Dream—husband	19	Bed—Ostermoor	17
Chair—round		Yellow—cards	17	Heavy—iron	
Sweet—sugar		Bread—rye		Tobacco—Durham	
Whistle—mother	19	Justice—liberty		Baby—Rose	17
Woman—twenty-one	12	Boy—Joe		Moon—half	
Cold—ice		Light—white		Scissors—steel	
Slow—music		Health—death	10	Quiet—nursing	19
Wish—girl		Bible—holy		Green—grass	
River—Hudson		Memory—seven	12	Salt—rock	
White—plaster	17	Sheep—lamb		Street—Liberty	17
Beautiful—nature		Bath—cleanness		King—Alphonso	
Window—St. Patrick's	19	Cottage—gray	17	Cheese—Swiss	
Rough—blankets	17	Swift—ball		Blossom—apple	
Citizen—twenty-one	12	Blue—balloon	10	Afraid—dark	
Foot—six	12	Hungry—yes	12		
Spider—fly		Priest—doctor			

CASE No. 6511.—U. B. Maniacal attack. Persistent use of particles *oh*, *me*, *I*, *none*, etc.

Table—none	6	Needle—pine	17	Ocean—I	5
Dark—red	19	Red—brother	19	Head—home	6
Music—stock	19	Sleep—Adam	19	Stove—home	6
Sickness—rose	19	Anger—I	6	Long—short	6
Man—Frank	17	Carpet—home	6	Religion—none	6
Deep—blue	12	Girl—Agatha	17	Whiskey—none	17
Soft—pillow	12	High—niece	13	Child—Sylvester	12
Eating—no	11	Working—I	6	Bitter—I	6
Mountain—oyster	11	Sour—I	5	Hammer—my	12
House—mercy	19	Earth—I	5	Thirsty—no	6
Black—mother	19	Trouble—I	5	City—no	5
Mutton—me	6	Soldier—father	15	Square—Ben	19
Comfort—home	15	Cabbage—hail	19	Butter—I	6
Hand—mother	15	Hard—me	12	Doctor—I	5
Short—me	6	Eagle—I	6	Loud—bell	10
Fruit—me	5	Stomach—I	5	Thief—iron	10
Butterfly—it	12	Stem—life	6	Lion—I	6
Smooth—oh	12	Lamp—Lambert	10	Joy—I	5
Command—none	6	Dream—I	6	Bed—I	5
Chair—none	5	Yellow—I	5	Heavy—I	5
Sweet—for	12	Bread—I	5	Tobacco—I	5
Whistle—bird	6	Justice—I	5	Baby—I	5
Woman—I	6	Boy—just	13	Moon—will	12
Cold—I	5	Light—picture	19	Scissors—beads	15
Slow—me	2	Health—cook	19	Quiet—nerves	19
Wish—none	2	Bible—beads	17	Green—I	6
River—are	12	Memory—Dick	19	Salt—I	5
White—wife	10	Sheep—to	12	Street—Peter	17
Beautiful—Alma	17	Bath—none	6	King—I	6
Window—Stephen	19	Cottage—home	6	Cheese—I	5
Rough—Rudolphia	10	Swift—lazy	19	Blossom—I	5
Citizen—father	17	Blue—Nell	19	Afraid—no	5
Foot—Anthon	19	Hungry—I	5		
Spider—reverend	19	Priest—I	5		

CASE No. 4427.—A. R. Maniacal attack. Unusual number of doubtful reactions; 46 individual reactions of which 9 are classed as normal; 29 are unclassified, some seemingly incoherent.

Table—Chicago	19	Needle—canoe	19	Ocean—ships	6
Dark—Montreal	18	Red—refreshments	10	Head—intelligence	6
Music—Mississippi	18	Sleep—restfulness	2	Stove—woods	2
Sickness—flowers	19	Anger—usefulness	9	Long—trains	2
Man—ocean	19	Carpet—coach	19	Religion—godliness	2
Deep—medicines	19	Girl—finery	19	Whiskey—drunkenness	2
Soft—accidental	19	High—fortifications	19	Child—joyfulness	2
Eating—vaccination	19	Working—materials	19	Bitter—olives	2
Mountain—evergreens	17	Sour—pickles	2	Hammer—nuts	2
House—caves	19	Earth—gravitation	2	Thirsty—water	2
Black—station	19	Trouble—graphophone	19	City—shopping	2
Mutton—operations	19	Soldier—guns	19	Square—monuments	2
Comfort—money	10	Cabbage—children	19	Butter—crackers	17
Hand—bandages	10	Hard—inheritor	19	Doctor—medicines	2
Short—soldiers	19	Eagle—feathers	19	Loud—music	2
Fruit—dictionary	19	Stomach—envelope	19	Thief—detectives	2
Butterfly—storehouse	19	Stem—roots	2	Lion—cages	2
Smooth—vegetables	18	Lamp—oil	2	Joy—home	2
Command—Bible	14	Dream—fairies	17	Bed—restfulness	2
Chair—histories	14	Yellow—lemons	2	Heavy—expressage	17
Sweet—farewells	19	Bread—jams	17	Tobacco—cigars	2
Whistle—ammunition	19	Justice—repentance	17	Baby—carriage	2
Woman—foreign	19	Boy—clothes	17	Moon—light	2
Cold—armory	19	Light—lanterns	17	Scissors—goods	2
Slow—St. Petersburg	19	Health—joys	2	Quiet—peacefulness	2
Wish—wealth	10	Bible—heaven	2	Green—vegetables	2
River—revenue	10	Memory—head	2	Salt—water	2
White—purity	19	Sheep—pastures	2	Street—stones	2
Beautiful—colonial	19	Bath—cleanliness	2	King—crown	2
Window—shutters	2	Cottage—home	2	Cheese—knife	2
Rough—planes	2	Swift—rapids	2	Blossom—plants	2
Citizen—naturalization	19	Blue—truth	2	Afraid—enemies	17
Foot—carriage	19	Hungry—appetite	2		
Spider—remedies	19	Priest—saintliness	17		

CASE No. 6457.—C. G. Depressive attack. 36 individual reactions of which 9 are classed as normal and 20 as unclassified; among the latter several seem to be incoherent.

Table—fish .....17	Needle—sewing	Ocean—briny .....19
Dark—boat	Red—man 9	Head—hard
Music—water .....18	Sleep—pond .....19	Stove—black
Sickness—tank .....18	Anger—hatred	Long—grass
Man—horse	Carpet—tacks	Religion—thinking 1
Deep—ocean	Girl—floor .....13	Whiskey—Kentucky
Soft—egg	High—mountain	Child—carriage
Eating—beans .....17	Working—dog .....19	Bitter—pickles
Mountain—grass	Sour—milk	Hammer—nails
House—roof	Earth—mud	Thirsty—wanting
Black—bath .....10	Trouble—radiator .....19	City—New York
Mutton—butcher	Soldier—cannon	Square—base .....17
Comfort—cigar .....17	Cabbage—vegetable	Butter—cow
Hand—shoes .....19	Hard—wood	Doctor—carriage
Short—baseball .....19	Eagle—quick .....19	Loud—hall .....19
Fruit—orange	Stomach—flesh	Thief—prison
Butterfly—elephant .....19	Stem—pipe	Lion—cage
Smooth—glass	Lamp—burn	Joy—automobile
Command—general	Dream—thinking 1	Bed—iron
Chair—kitchen .....17	Yellow—mice .....19	Heavy—lead
Sweet—cake .....17	Bread—baker	Tobacco—weed
Whistle—bird	Justice—equality	Baby—rocker
Woman—door .....19	Boy—young	Moon—sky
Cold—ice	Light—green .....17	Scissors—laundry .....19
Slow—cat .....19	Health—art .....19	Quiet—peaceful
Wish—bed .....19	Bible—preacher	Green—engine .....19
River—trout .....17	Memory—return .....19	Salt—grocer .....19
White—paint	Sheep—fold	Street—Lincoln .....17
Beautiful—monkey .....19	Bath—water	King—Spain
Window—bars	Cottage—house	Cheese—baker .....19
Rough—rowdy	Swift—fleeing 2	Blossom—flower
Citizen—policeman	Blue—dark	Afraid—going 2
Foot—fine 9	Hungry—thirst	
Spider—insect	Priest—elephant .....15	

INVOLUTIONAL MELANCHOLIA; ALCOHOLIC DEMENTIA; SENILE DEMENTIA.

There are so few cases of these psychoses in our series that we can say but little concerning their associational disorders.

In Table V. we show all the types of reactions given by each subject.

We have not observed in our cases of *involutional melancholia* any undue tendency to give individual reactions. The records are either perfectly normal or slightly abnormal in that they show an increase of the non-specific (common) reactions. In this respect they resemble strongly the records obtained from some cases of manic-depressive insanity. This similarity is of interest in connection with other evidence, recently brought to light,¹ showing that involutional melancholia is closely related to manic-depressive insanity, if not identical with it.

¹ G. L. Dreyfus. Die Melancholie ein Zustandsbild des manisch-depressiven Irreseins. 1907.

TABLE V.

TYPES OF REACTION.	Involuntal Melancholia.						Alcoholic Dementia.					Senile Dementia.						
	Case No. 6207.	Case No. 4818.	Case No. 5719.	Case No. 6480.	Case No. 6308.	Case No. 6077.	Case No. 4812.	Case No. 6635.	Case No. 6298.	Case No. 6309.	Case No. 6067.	Case No. 6469.	Case No. 01009.	Case No. 6418.	Case No. 6471.	Case No. 6837.	Case No. 6633.	Case No. 6788.
<i>Common reactions:</i>	96	92	79	92	83	96	83	78	90	79	75	77	80	46	72	71	82	77
Specific reactions.....	13	2	12	1	9	4	6	6	3	11	10	8	3	8	16	8	..	3
Non-specific reactions.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
<i>Doubtful reactions.</i>	1	2	4	1	1	2	2	3	1	2	5	3	3	7	..	6	..	..
<i>Individual reactions:</i>																		
Normal reactions.....	..	2	1	4	..	3	1	6	5	4	3	4	3	14	2	4	8	3
Derivatives of stimulus words.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Non-specific reactions.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sound reactions (words).....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sound reactions (neologisms).....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Word complements.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Particles of speech.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Association to preceding stimulus.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Repetition of preceding reaction.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Repetition of preceding stimulus.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Repetition of preceding reaction.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Reaction repeated five times.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Neologisms without sound relation.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Unclassified.....	..	2	4	..	1	3	1	6	..	2	3	4	8	14	6	2	8	5
Total individual reactions.....	0	4	5	6	7	8	9	13	6	8	10	12	14	39	12	15	18	20

CASE No. 4818.—S. M. Normal record.

Table—wood	Needle—instrument	Ocean—water
Dark—black	Red—color	Head—body
Music—noise	Sleep—repose	Stove—fire
Sickness—illness	Anger—temper	Long—distance
Man—being	Carpet—rug	Religion—creed
Deep—depth	Girl—sex	Whiskey—liquor
Soft—mushy	High—elevation	Child—infant
Eating—devouring	Working—employment	Bitter—sour
Mountain—hill	Sour—bitter	Hammer—tool
House—residence	Earth—clay	Thirsty—dry
Black—color	Trouble—anxiety	City—town
Mutton—meat	Soldier—military	Square—block
Comfort—luxury	Cabbage—vegetable	Butter—food
Hand—body	Hard—substance	Doctor—physician
Short—abrupt	Eagle—bird	Loud—noisy
Fruit—oranges	Stomach—body	Thief—burglar
Butterfly—insect	Stem—flower	Lion—animal
Smooth—even	Lamp—light	Joy—happiness
Command—order	Dream—imagination	Bed—cot
Chair—article	Yellow—color	Heavy—weight
Sweet—taste	Bread—wheat	Tobacco—weed
Whistle—noise	Justice—credit	Baby—infant
Woman—sex	Boy—child	Moon—light
Cold—temperature	Light—sun	Scissors—instrument
Slow—dull	Health—condition	Quiet—noiseless
Wish—desire	Bible—book	Green—color
River—water	Memory—remembrance	Salt—seasoning
White—color	Sheep—lamb	Street—block
Beautiful—sky	Bath—bathing	King—ruler
Window—glass	Cottage—house	Cheese—food
Rough—uneven	Swift—rapid	Blossom—flower
Citizen—representative	Blue—color	Afraid—fear
Foot—end	Hungry—desire	
Spider—insect	Priest—minister	

CASE No. 6207.—T. S. No individual reactions; 13 non-specific reactions.

Table—furniture	Needle—instrument	Ocean—water
Dark—color	Red—color	Head—person
Music—fiddle	Sleep—bed	Stove—heat
Sickness—bed	Anger—irritable	Long—length
Man—person	Carpet—rug	Religion—belief
Deep—water	Girl—person	Whiskey—drink
Soft—pliable	High—elevation	Child—person
Eating—cake	Working—try	Bitter—sour
Mountain—high	Sour—bitter	Hammer—tool
House—bricks	Earth—sand	Thirsty—dry
Black—color	Trouble—anxiety	City—place
Mutton—meat	Soldier—person	Square—shape
Comfort—easy	Cabbage—plant	Butter—eat
Hand—limb	Hard—stone	Doctor—physician
Short—small	Eagle—bird	Loud—hear
Fruit—vegetable	Stomach—person	Thief—steal
Butterfly—insect	Stem—apple	Lion—animal
Smooth—level	Lamp—light	Joy—glad
Command—control	Dream—sleep	Bed—sleep
Chair—sit	Yellow—color	Heavy—weight
Sweet—nice	Bread—flour	Tobacco—plant
Whistle—noise	Justice—equal	Baby—child
Woman—person	Boy—child	Moon—light
Cold—atmosphere	Light—gas	Scissors—tool
Slow—easy	Health—doctor	Quiet—rest
Wish—something	Bible—Scripture	Green—color
River—stream	Memory—thought	Salt—spice
White—color	Sheep—animal	Street—place
Beautiful—nice	Bath—water	King—ruler
Window—glass	Cottage—house	Cheese—eat
Rough—unpleasant	Swift—quick	Blossom—flower
Citizen—person	Blue—color	Afraid—hide
Foot—limb	Hungry—want	
Spider—insect	Priest—preach	

CASE No. 5719.—A. W. S. 5 individual reactions; 12 non-specific reactions.

Table—stand	Needle—pointed	Ocean—water
Dark—color	Red—blood	Head—brains
Music—happy 1	Sleep—rest	Stove—heat
Sickness—ill	Anger—riled	Long—measurement 2
Man—human	Carpet—covering	Religion—good 1
Deep—thought 1	Girl—child	Whiskey—alcohol
Soft—touch	High—air	Child—baby
Eating—appetite	Working—ambitious	Bitter—taste
Mountain—ground	Sour—taste	Hammer—knock
House—shelter	Earth—ground	Thirsty—water
Black—color	Trouble—thought 1	City—New York
Mutton—lamb	Soldier—command	Square—box
Comfort—warm	Cabbage—vegetable	Butter—milk
Hand—touch	Hard—blow 17	Doctor—help
Short—small 1	Eagle—bird	Loud—noise
Fruit—taste	Stomach—body	Thief—burglar
Butterfly—beauty 1	Stem—pipe	Lion—animal
Smooth—level	Lamp—light	Joy—well 19
Command—obey	Dream—thought 1	Bed—rest
Chair—rest	Yellow—purple	Heavy—load
Sweet—good	Bread—food	Tobacco—nicotine
Whistle—noise	Justice—law	Baby—joy
Woman—female	Boy—male	Moon—light
Cold—chilled 2	Light—lamp	Scissors—cutting
Slow—move	Health—soul 19	Quiet—rest
Wish—think 1	Bible—Scriptures	Green—color
River—water	Memory—thought 1	Salt—sand 19
White—color	Sheep—lamb	Street—crossing 2
Beautiful—nice 1	Bath—cleanness	King—ruler
Window—glass	Cottage—house	Cheese—luxury 19
Rough—push	Swift—quick	Blossom—flower
Citizen—man 1	Blue—color	Afraid—fright
Foot—body	Hungry—appetite	
Spider—insect	Priest—scholar 2	

CASE No. 5635. J. D. 13 individual reactions, of which 6 are classed as normal, 1 particle, 6 unclassified, mostly obviously normal.

Table—eating	Needle—sticking 19	Ocean—bathing
Dark—night	Red—danger	Head—mind
Music—amusement	Sleep—rest	Stove—fire
Sickness—distress	Anger—right 19	Long—hours
Man—working	Carpet—house	Religion—church
Deep—sorrow	Girl—out 12	Whiskey—drinking
Soft—easy	High—air	Child—home
Eating—supper 17	Working—labor	Bitter—sour
Mountain—pleasure 1	Sour—bitter	Hammer—working
House—home	Earth—ground	Thirsty—dry
Black—grief 19	Trouble—worry	City—New York
Mutton—butchers 2	Soldier—man 1	Square—block
Comfort—home	Cabbage—farmer 2	Butter—cow
Hand—shake	Hard—bath 19	Doctor—hospital
Short—baseball 19	Eagle—birds	Loud—speaking 2
Fruit—eating	Stomach—body	Thief—sentence 17
Butterfly—field	Stem—pipe	Lion—animal
Smooth—soft	Lamp—burn	Joy—pleasure 1
Command—oblige 17	Dream—thinking 1	Bed—sleeping
Chair—seat	Yellow—color	Heavy—weight
Sweet—flowers	Bread—eating	Tobacco—smoking
Whistle—fire	Justice—peace	Baby—home
Woman—home	Boy—soldier 17	Moon—night
Cold—winter	Light—day	Scissors—cutting
Slow—easy	Health—happy 1	Quiet—alone
Wish—home	Bible—books	Green—color
River—dock 17	Memory—good 1	Salt—eating
White—day	Sheep—lamb	Street—walking
Beautiful—handsome	Bath—washing	King—William 17
Window—glass	Cottage—house	Cheese—milk
Rough—wagon 19	Swift—quick	Blossom—flower
Citizen—voter	Blue—color	Afraid—fright
Foot—walking	Hungry—eating	
Spider—web	Priest—church	

Our cases of *alcoholic dementia* are clinically without evidences of disturbance of flow of thought. The dementia consists mainly

in impairment or loss of the power of retention, with resulting amnesia for recent occurrences, and temporal disorientation. The records are either normal or show but slight departures from normal.

CASE No. 6369.—J. S. Slight deterioration.

Table—eat	Needle—sticking .....19	Ocean—vessels 2
Dark—night	Red—color	Head—knowledge
Music—enjoyment	Sleep—happy 1	Stove—burn
Sickness—sadness	Anger—annoyance	Long—time
Man—work 1	Carpet—walk	Religion—faith
Deep—hole	Girl—school	Whiskey—drink
Soft—feathers	High—skies	Child—infant
Eating—appetite	Working—labor	Bitter—unkind .....17
Mountain—hill	Sour—lemon	Hammer—nail
House—live	Earth—walk	Thirsty—dry
Black—dark	Trouble—annoyance	City—inhabitants
Mutton—eat	Soldier—army	Square—brick
Comfort—pleasant 1	Cabbage—eat	Butter—eat
Hand—work 1	Hard—stone	Doctor—cure
Short—story	Eagle—fly	Loud—noise
Fruit—eat	Stomach—victuals .....17	Thief—steal
Butterfly—annoyance ... 6	Stem—pipe	Lion—animal
Smooth—iron	Lamp—burn	Joy—happiness 1
Command—officer	Dream—sleep	Bed—lay
Chair—sit	Yellow—orange	Heavy—feeling 2
Sweet—nice 1	Bread—eat	Tobacco—chew
Whistle—pleasure 1	Justice—person 1	Baby—nurse
Woman—pleasure 1	Boy—school	Moon—bright
Cold—annoyance 6	Light—see	Scissors—cut
Slow—car	Health—comfort	Quiet—ease
Wish—like	Bible—read	Green—flower
River—water	Memory—recollection ..	Salt—taste
White—sack .....17	Sheep—eat	Street—walking
Beautiful—house .....17	Bath—cleanness	King—control .....19
Window—look	Cottage—live	Cheese—eat
Rough—unpleasant 1	Swift—go	Blossom—flower
Citizen—man 1	Blue—color	Afraid—nervousness ..
Foot—walk	Hungry—eat	
Spider—annoyance	Priest—confession	

CASE No. 6418.—J. R. Marked deterioration.

Table—mahogany	Needle—darning	Ocean—Pacific .....17
Dark—dawn .....17	Red—apples	Head—oval .....19
Music—harp .....17	Sleep—plenty	Stove—polish .....12
Sickness—none 6	Anger—mistake .....17	Long—forever .....12
Man—white .....19	Carpet—floor	Religion—Protestant ...
Deep—unfathomable ... 2	Girl—pretty 1	Whiskey—none 5
Soft—silken 2	High—ordinary .....19	Child—none 5
Eating—good 1	Working—eight .....12	Bitter—sweet .....12
Mountain—high	Sour—nonsense .....19	Hammer—no .....12
House—place	Earth—fruits 2	Thirsty—no 5
Black—color	Trouble—little	City—New York
Mutton—cooked .....17	Soldier—patriot	Square—compass
Comfort—rest	Cabbage—garden	Butter—sweet
Hand—clasp .....19	Hard—wood	Doctor—cure
Short—small 1	Eagle—high	Loud—quietly 2
Fruit—apples	Stomach—leave .....19	Thief—jail
Butterfly—buttercups ... 2	Stem—stalk	Lion—brave
Smooth—iron	Lamp—kerosene	Joy—peacefulness 2
Command—home .....19	Dream—happy 1	Bed—good 1
Chair—ebony .....19	Yellow—aster .....17	Heavy—no .....12
Sweet—potatoes .....17	Bread—white	Tobacco—yes .....12
Whistle—song	Justice—right	Baby—none 6
Woman—pretty 1	Boy—white .....15	Moon—shines
Cold—depressed .....19	Light—white	Scissors—uncut 2
Slow—process .....17	Health—good 1	Quiet—peaceful
Wish—home	Bible—puzzled .....19	Green—grass
River—Mississippi	Memory—bad 1	Salt—water
White—wings .....17	Sheep—cheviot .....17	Street—Queen .....17
Beautiful—palace .....19	Bath—marble .....17	King—unknown .....19
Window—clear	Cottage—story .....17	Cheese—Stilton .....17
Rough—no .....12	Swift—fast	Blossom—cherry
Citizen—patriot	Blue—waist .....17	Afraid—not
Foot—heath .....19	Hungry—not 2	
Spider—none 6	Priest—confessor	

We reproduce in full the record obtained from one of our cases of *senile dementia*.

CASE No. 5788.—E. S.

Table—cat	6	Needle—pin		Ocean—river	
Dark—night		Red—white		Head—life	
Music—cat	2	Sleep—eyes		Stove—fire	
Sickness—cat	5	Anger—mad		Long—short	
Man—mouse	18	Carpet—cloth		Religion—Catholic	
Deep—well		Girl—boy		Whiskey—drink	
Soft—sack	19	High—low		Child—boy	
Eating—well		Working—sewing		Bitter—sweet	
Mountain—hill		Sour—sweet		Hammer—noise	
House—castle		Earth—clay		Thirsty—drink	
Black—dog		Trouble—cold	15	City—New York	
Mutton—sheep		Soldier—man	1	Square—Marion	17
Comfort—lamb	13	Cabbage—spinach		Butter—cow	
Hand—chicken	18	Hard—cat	6	Doctor—W	17
Short—light	19	Eagle—bird		Loud—noise	
Fruit—apple		Stomach—belly		Thief—steals	
Butterfly—fly		Stem—pike	17	Lion—beast	
Smooth—iron		Lamp—globe		Joy—happy	1
Command—obey		Dream—eyes		Bed—mattress	
Chair—stool		Yellow—flower		Heavy—load	
Sweet—sugar		Bread—flour		Tobacco—smoke	
Whistle—lump	18	Justice—right		Baby—boy	
Woman—man	1	Boy—cat	6	Moon—shine	
Cold—shiver		Light—lamp		Scissors—cut	
Slow—cold	7	Health—cough	17	Quiet—noisy	
Wish—push	19	Bible—book		Green—color	
River—pond		Memory—mind		Salt—bitter	
White—cat		Sheep—lamb		Street—place	
Beautiful—cat	5	Bath—water		King—rule	
Window—glass		Cottage—house		Cheese—taste	
Rough—tight	19	Swift—quick		Blossom—flower	
Citizen—tough		Blue—color		Afraid—trouble	
Foot—shoe		Hungry—eat			
Spider—clock	19	Priest—clergyman			

§ 8. PATHOLOGICAL REACTIONS FROM NORMAL SUBJECTS.

Mental disorders do not always so manifest themselves as to incapacitate the subject for his work or to necessitate his sequestration in a hospital for the insane. It is, therefore, not surprising that in applying the association test to over a thousand subjects selected at random we have obtained a small number of test records which show various types of abnormal reactions. Among the subjects who furnished such records some are described as eccentric, taciturn, or dull, while others are apparently normal but come of neuropathic stock. A few of them are persons wholly unknown to us.

We reproduce in full several records from the normal series, containing abnormal reactions.

CONSECUTIVE No. 746.—State hospital attendant. Efficient in his work but is generally regarded to have married very foolishly. Sound reactions; numerous unclassified reactions.

Table—brought	19	Needle—knee	10	Ocean—oar	10
Dark—some	19	Red—roam	19	Head—him	12
Music—leaf	19	Sleep—sorrow	19	Stove—still	10
Sickness—water	19	Anger—August	19	Long—left	15
Man—book	19	Carpet—covered	2	Religion—rest	19
Deep—desk	19	Girl—great	9	Whiskey—whirl	15
Soft—ground	19	High—his	12	Child—charge	19
Eating—bark	19	Working—map	19	Bitter—bought	10
Mountain—tree	19	Sour—slur	10	Hammer—hemp	10
House—paper	19	Earth—eat	19	Thirsty—Thursday	10
Black—light	19	Trouble—through	12	City—salt	10
Mutton—horse	13	Soldier—soldier	10	Square—squirrel	10
Comfort—hat	19	Cabbage—cart	19	Butter—bread	19
Hand—sick	13	Hard—him	12	Doctor—daisy	19
Short—swallow	19	Eagle—earth	13	Loud—lark	19
Fruit—mass	19	Stomach—stall	10	Thief—twist	19
Butterfly—leaf	15	Stem—stair	10	Lion—lesson	10
Smooth—wing	13	Lamp—left	19	Joy—jar	19
Command—man	1	Dream—dread	19	Bed—beard	10
Chair—left	19	Yellow—waist	15	Heavy—health	10
Sweet—sick	2	Bread—book	15	Tobacco—toboggan	10
Whistle—whirl	10	Justice—gem	19	Baby—bird	15
Woman—where	12	Boy—bird	19	Moon—mill	19
Cold—coal	19	Light—left	10	Scissors—setters	10
Slow—some	15	Health—heart	17	Quiet—quart	10
Wish—whirl	15	Bible—base	19	Green—great	9
River—rice	19	Memory—moth	19	Salt—sorrow	10
White—waist	19	Sheep—strill	19	Street—stem	10
Beautiful—brought	15	Bath—bend	10	King—cart	15
Window—women	10	Cottage—cart	10	Cheese—chart	19
Rough—row	19	Swift—swell	10	Blossom—bed	19
Citizen—sir	10	Blue—beard	11	Afraid—frill	10
Foot—fall	19	Hungry—heart	15		
Spider—spice	10	Priest—path	19		

CONSECUTIVE No. 220.—Laundryman in State hospital. Nothing abnormal has ever been observed in his case. Numerous perseverations.

Table—house	19	Needle—thread	19	Ocean—rice	19
Dark—range	19	Red—spool	18	Head—eyes	19
Music—cats	19	Sleep—machine	18	Stove—nose	18
Sickness—dog	18	Anger—picture	19	Long—mouth	18
Man—barn	19	Carpet—bed	17	Religion—legs	18
Deep—hollow	19	Girl—bureau	18	Whiskey—arms	18
Soft—apple	19	High—oilcloth	18	Child—elbows	18
Eating—cranberry	17	Working—pen	19	Bitter—day	19
Mountain—water	17	Sour—ink	18	Hammer—nails	19
House—pig	19	Earth—paper	18	Thirsty—saw	13
Black—rats	18	Trouble—chair	19	City—plane	18
Mutton—mice	2	Soldier—table	14	Square—chisel	18
Comfort—sheep	13	Cabbage—beet	19	Butter—file	18
Hand—lamb	14	Hard—cauliflower	13	Doctor—duck	10
Short—birds	19	Eagle—potatoes	18	Loud—goose	18
Fruit—peach	19	Stomach—beans	17	Thief—robber	18
Butterfly—pears	18	Stem—plum	17	Lion—tiger	19
Smooth—grapes	18	Lamp—wick	19	Joy—bear	13
Command—nut	18	Dream—oil	13	Bed—leopard	18
Chair—bureau	19	Yellow—stick	19	Heavy—tiger	15
Sweet—broom	19	Bread—stone	18	Tobacco—smoke	19
Whistle—violin	19	Justice—dirt	18	Baby—pipe	13
Woman—man	1	Boy—street	19	Moon—star	19
Cold—child	10	Light—match	19	Scissors—sharp	19
Slow—infant	14	Health—sickness	19	Quiet—noisy	19
Wish—night	19	Bible—book	19	Green—blue	19
River—dark	14	Memory—leaf	13	Salt—yellow	13
White—steamboat	17	Sheep—wool	19	Street—green	14
Beautiful—tugboat	18	Bath—water	19	King—purple	14
Window—yacht	18	Cottage—people	1	Cheese—axe	19
Rough—ferry	18	Swift—fast	19	Blossom—handle	19
Citizen—water	13	Blue—residence	19	Afraid—barn	19
Foot—egg	19	Hungry—beef	17		
Spider—fly	19	Priest—clergyman	19		

CONSECUTIVE No. 255.—State hospital attendant. Efficient, but unusually taciturn and seclusive. Sound reactions.

Table—linen	1	Needle—work	1	Ocean—apple	19
Dark—sunshine	17	Red—robe	19	Head—heart	10
Music—song	10	Sleep—soap	10	Stove—strap	10
Sickness—Saturday	19	Anger—angel	19	Long—love	15
Man—manager	10	Carpet—carriage	19	Religion—belief	10
Deep—dark	10	Girl—guide	19	Whiskey—whisk broom	10
Soft—sorrowful	10	High—heart	10	Child—chap	10
Eating—eighty	10	Working—worthy	10	Bitter—butter	10
Mountain—miner	19	Sour—satchel	19	Hammer—habit	19
House—heart	19	Earth—early	10	Thirsty—thirty	10
Black—blue	10	Trouble—trout	19	City—soap	15
Mutton—mountain	10	Soldier—socket	19	Square—squirrel	10
Comfort—company	17	Cabbage—currant	17	Butter—bank	19
Hand—happy	10	Hard—harmful	10	Doctor—dentist	10
Short—slow	17	Eagle—early	15	Loud—laugh	10
Fruit—froth	10	Stomach—stable	19	Thief—thump	19
Butterfly—butter	10	Stem—stand	10	Lion—lump	19
Smooth—smoke	10	Lamp—light	10	Joy—jump	19
Command—company	10	Dream—drunk	10	Bed—bank	15
Chair—chap	10	Yellow—lustre	19	Heavy—happy	10
Sweet—slow	15	Bread—brand	10	Tobacco—tub	19
Whistle—whip	10	Justice—judgment	10	Baby—bundle	10
Woman—worried	19	Boy—butter	15	Moon—mantle	10
Cold—cow	10	Light—love	19	Scissors—Saturday	15
Slow—slap	10	Health—help	10	Quiet—quarter	10
Wish—water	10	Bible—book	10	Green—drought	19
River—rubbed	19	Memory—mental	10	Salt—Saturday	10
White—wash	10	Sheep—shop	10	Street—straight	10
Beautiful—bounty	10	Bath—bandage	10	King—cattle	19
Window—light	10	Cottage—cot	10	Cheese—captain	19
Rough—roguish	19	Swift—swan	10	Blossom—bandage	15
Citizen—sight-seeing	19	Blue—black	10	Afraid—flattered	10
Foot—fool	10	Hungry—height	19		
Spider—span	10	Priest—house	10		

CONSECUTIVE No. 442.—Nothing abnormal has ever been suspected in the case of this subject; mother eccentric; sister insane. Sound reactions.

Table—stable	10	Needle—needle	10	Ocean—over	12
Dark—dreary	10	Red—color	10	Head—large	1
Music—joy	10	Sleep—sleet	10	Stove—stone	10
Sickness—silliness	10	Anger—rough	10	Long—heavy	19
Man—manner	10	Carpet—carpenter	10	Religion—goodness	1
Deep—dreary	15	Girl—going	19	Whiskey—strong	10
Soft—sooth	19	High—air	10	Child—small	1
Eating—evening	10	Working—tolling	10	Bitter—butter	10
Mountain—morning	18	Sour—shower	10	Hammer—hard	10
House—help	19	Earth—eating	19	Thirsty—thrifty	10
Black—dark	10	Trouble—loneliness	17	City—seeing	10
Mutton—mitten	10	Soldier—solid	10	Square—squirrel	10
Comfort—come	10	Cabbage—carrying	19	Butter—bitter	10
Hand—handsome	10	Hard—hardly	8	Doctor—dark	10
Short—small	1	Eagle—eating	10	Loud—noisy	10
Fruit—first	10	Stomach—starch	10	Thief—stealing	10
Butterfly—butter	10	Stem—step	2	Lion—eating	10
Smooth—sooth	10	Lamp—glass	10	Joy—joyous	8
Command—come	10	Dream—dreary	10	Bed—sleep	10
Chair—air	10	Yellow—yonder	12	Heavy—weightful	4
Sweet—good	1	Bread—bed	10	Tobacco—cocoa	10
Whistle—music	10	Justice—juice	10	Baby—boys	2
Woman—wonder	19	Boy—ball	10	Moon—moo	3
Cold—freezing	10	Light—likeness	10	Scissors—successors	10
Slow—snow	10	Health—help	10	Quiet—easy	10
Wish—wind	10	Bible—book	10	Green—gram	10
River—rifle	3	Memory—memorial	2	Salt—simmer	19
White—wait	10	Sheep—sleep	10	Street—steep	10
Beautiful—handsome	10	Bath—battle	10	King—kingdom	10
Window—light	10	Cottage—cotton	10	Cheese—squeeze	10
Rough—harsh	10	Swift—fast	10	Blossom—blooming	10
Citizen—city	10	Blue—blind	10	Afraid—Africa	10
Foot—walk	10	Hungry—hurry	10		
Spider—creep	10	Priest—prince	10		

CONSECUTIVE No. 314.—School teacher. Efficient; described as very silent. Unclassified reactions, due mostly to distraction.

Table—cat	19	Needle—good	9	Ocean—boat	
Dark—no	12	Red—bad	9	Head—hat	
Music—will	19	Sleep—hinge	19	Stove—ashes	17
Sickness—chair	19	Anger—will	15	Long—short	
Man—table	6	Carpet—paper	6	Religion—peace	
Deep—floor	14	Girl—chair	15	Whiskey—bottle	
Soft—paper	6	High—table	6	Child—dress	
Eating—wood	19	Working—cane	15	Bitter—sour	
Mountain—chair	15	Sour—floor	15	Hammer—teeth	19
House—window		Earth—ceiling	18	Thirsty—dry	
Black—wall		Trouble—chain	19	City—good	1
Mutton—sky	19	Soldier—desk	19	Square—wood	
Comfort—air	18	Cabbage—paper		Butter—best	10
Hand—table		Hard—table		Doctor—shoes	19
Short—paper	6	Eagle—flower	15	Loud—music	
Fruit—sweeping	19	Stomach—match	19	Thief—notes	2
Butterfly—room	18	Stem—match		Lion—strings	19
Smooth—working	2	Lamp—table		Joy—happy	1
Command—stone	19	Dream—chair	14	Bed—wish	13
Chair—machine	19	Yellow—cane	18	Heavy—lead	
Sweet—radiator	19	Bread—flour		Tobacco—plant	
Whistle—clock	19	Justice—peace		Baby—good	1
Woman—cane	19	Boy—window	15	Moon—paper	6
Cold—flower	19	Light—wall	18	Scissors—straw	19
Slow—cord	19	Health—floor	18	Quiet—hoop	19
Wish—marriage	2	Bible—house	18	Green—rope	19
River—chimney	19	Memory—paper	6	Salt—dish	
White—wheel	19	Sheep—dress	19	Street—dirt	
Beautiful—cane	15	Bath—clothes	18	King—bucket	19
Window—pot	19	Cottage—earth	19	Cheese—plate	
Rough—grass	19	Swift—sky	18	Blossom—plant	
Citizen—paper	19	Blue—trees	19	Afraid—sweeping	15
Foot—closet	19	Hungry—leaves	18		
Spider—awning	19	Priest—bark	18		

CONSECUTIVE No. 216.—State hospital attendant. Incompetent, dull. Numerous non-specific reactions.

Table—rolling	19	Needle—small	1	Ocean—wide	
Dark—swim	19	Red—dark		Head—large	1
Music—playing	19	Sleep—easy		Stove—black	
Sickness—riding	19	Anger—bad	1	Long—wide	
Man—walk		Carpet—small	1	Religion—good	1
Deep—singing	19	Girl—short	15	Whiskey—strong	
Soft—light		High—long		Child—small	1
Eating—sleep		Working—good	1	Bitter—bad	1
Mountain—low		Sour—bad	1	Hammer—small	1
House—small	1	Earth—large	1	Thirsty—bad	1
Black—dark		Trouble—bad	1	City—big	
Mutton—lean	19	Soldier—good	1	Square—long	
Comfort—good	1	Cabbage—small	6	Butter—good	1
Hand—small	1	Hard—apples		Doctor—good	1
Short—small	1	Eagle—small	6	Loud—hearty	19
Fruit—taste		Stomach—good	1	Thief—bad	1
Butterfly—beautiful	1	Stem—short		Joy—happy	1
Smooth—long	6	Lamp—bright		Bed—easy	
Command—immediate	2	Dream—good	1	Heavy—stone	
Chair—small	6	Yellow—light		Tobacco—strong	
Sweet—clear	19	Bread—good	1	Baby—small	1
Whistle—long		Justice—good	1	Moon—large	1
Woman—small	1	Boy—small	1	Scissors—sharp	
Cold—long	6	Light—clear		Quiet—baby	
Slow—write	2	Health—good	1	Green—dark	
Wish—quick	10	Bible—true		Salt—strong	10
River—long		Memory—good	1	Street—wide	
White—clean		Sheep—many		King—high	
Beautiful—nice	1	Bath—good	1	Cheese—good	1
Window—big	19	Cottage—large	1	Blossom—apples	
Rough—bad	1	Swift—fast		Afraid—he	12
Citizen—short	19	Blue—dark			
Foot—small	1	Hungry—long	6		
Spider—small	1	Priest—true	19		

CONSECUTIVE No. 318.—School boy. Non-specific reactions.

Table-board	Needle-sharp	Ocean-big
Dark-night	Red-crimson	Head-little .....15
Music-sound	Sleep-wake	Stove-hot
Sickness-pleasantness .. 9	Anger-mad	Long-distance
Man-people	Carpet-floor	Religion-good 1
Deep-river	Girl-good 1	Whiskey-bad 1
Soft-cat	High-tall	Child-cute
Eating-pleasantness ... 1	Working-sleep	Bitter-good 1
Mountain-high	Sour-bad 1	Hammer-hard
House-home	Earth-ground	Thirsty-hard 5
Black-dark	Trouble-bad 1	City-good 6
Mutton-good 1	Soldier-good 1	Square-round
Comfort-pleasure 1	Cabbage-bad 6	Butter-soft
Hand-foot	Hard-soft	Doctor-good 1
Short-little	Eagle-bird	Loud-noisy
Fruit-good 1	Stomach-ache	Thief-good 6
Butterfly-pretty 1	Stem-slender	Lion-big
Smooth-soft	Lamp-light	Joy-good 1
Command-go	Dream-good 1	Bed-comfortable
Chair-sit	Yellow-pretty 1	Heavy-light
Sweet-good 1	Bread-good 1	Tobacco-bad 1
Whistle-noise 1	Justice-good 1	Baby-pretty 1
Woman-pretty 1	Boy-fun	Moon-cute 13
Cold-bad 1	Light-see	Scissors-sharp
Slow-quick	Health-happiness 1	Quiet-loud
Wish-good 1	Bible-good 1	Green-pretty 1
River-deep	Memory-good 1	Salt-good 1
White-snow	Sheep-pretty 1	Street-narrow 1
Beautiful-pretty 1	Bath-good 1	King-good 6
Window-look	Cottage-pretty 1	Cheese-good 1
Rough-even	Swift-quick 1	Blossom-pretty 1
Citizen-good 1	Blue-yellow	Afraid-scared
Foot-hand	Hungry-eat	
Spider-bite	Priest-good 1	

CONSECUTIVE No. 234.—School boy. Non-specific reactions.

Table-chair	Needle-thick	Ocean-water
Dark-cold	Red-cow .....17	Head-large 1
Music-sweet	Sleep-dreams	Stove-fire
Sickness-hard	Anger-very .....12	Long-snake
Man-wise .....19	Carpet-pretty 1	Religion-Jesus
Deep-dark	Girl-small 1	Whiskey-temperance ..
Soft-sweet	High-tree	Child-healthy .....19
Eating-drinking	Working-hard	Bitter-apple
Mountain-snow	Sour-bitter	Hammer-nail
House-great 9	Earth-great 1	Thirsty-water
Black-horse	Trouble-hard	City-houses
Mutton-good 1	Soldier-brave	Square-desk
Comfort-health	Cabbage-good 1	Butter-yellow
Hand-foot	Hard-stone	Doctor-medicine
Short-fat	Eagle-great 9	Loud-harsh
Fruit-good 1	Stomach-weak	Thief-wicked
Butterfly-pretty 1	Stem-watch	Lion-fierce
Smooth-hard	Lamp-pretty 9	Joy-happiness 1
Command-general	Dream-sweet	Bed-rest
Chair-soft	Yellow-buttercup	Heavy-stone
Sweet-good 1	Bread-flour	Tobacco-dirty
Whistle-loud	Justice-man 1	Baby-small 1
Woman-large 1	Boy-gun	Moon-sky
Cold-dreary	Light-bright	Scissors-sharp
Slow-hard	Health-care 2	Quiet-lonely
Wish-fairy	Bible-holy	Green-sour
River-large 1	Memory-poor	Salt-cows .....19
White-snow	Sheep-pretty 1	Street-people 1
Beautiful-woman 1	Bath-nice 1	King-rich .....19
Window-large 1	Cottage-low	Cheese-yellow
Rough-hard	Swift-stream	Blossom-pretty 1
Citizen-good 1	Blue-bluebird 2	Afraid-fear
Foot-small 1	Hungry-tired	
Spider-ugly	Priest-church	

CONSECUTIVE No. 809.—Lawyer. 28 individual reactions, of which 14 are classed as normal; 10 are unclassified, most of which are also obviously normal.

Table—chair	Needle—tailor	Priest—surplice
Dark—candle	Red—flannel	Ocean—ship
Music—girl	Sleep—	Head—hair
Sickness—doctor	potassium bromide..17	Stove—shovel
Man—woman	Anger—teacher	Long—pole
Deep—swimming	Carpet—tack	Religion—Abraham
Soft—hand	Girl—belt	Whiskey—Kentucky
Eating—Reisenweber	High—pole	Child—baby
Mountain—Kipling	Working—laborer	Bitter—pepper
House—mortgage	Sour—apple	Hammer—nail
Black—spectrum	Earth—Columbus	Thirsty—lemonade
Mutton—pig	Trouble—lawyer	City—Manhattan
Comfort—chair	Soldier—gun	Square—Washington
Hand—ring	Cabbage—plantation	Butter—salt
Short—tall	Hard—brick	Doctor—nurse
Fruit—banana	Eagle—feathers	Loud—hammer
Butterfly—color	Stomach—juice	Thief—jewelry
Smooth—sphere	Stem—leaf	Lion—Androcles
Command—soldier	Lamp—light	Joy—automobile
Chair—teacher	Dream—pillow	Bed—shoes
Sweet—apple	Yellow—lemon	Heavy—Flannigan
Whistle—policeman	Bread—crust	Tobacco—pipe
Woman—hat	Justice—judge	Baby—wife
Cold—thermometer	Boy—pants	Moon—man
Slow—invalid	Light—gas	Scissors—cut
Wish—million	Health—medicine	Quiet—demure
River—Hudson	Bible—Jacob	Green—eyes
White—Broadway	Memory—brain	Salt—cellar
Beautiful—girl	Sheep—wool	Street—Wall
Window—school	Bath—soap	King—Edward
Rough—ball	Cottage—rod	Cheese—Roquefort
Citizen—justice	Swift—ball	Blossom—field
Foot—shoe	Blue—sky	Afraid—burglar
Spider—insect	Hungry—I	

§ 9. NUMBER OF DIFFERENT WORDS GIVEN AS REACTIONS.

It has been suggested by Fuhrmann¹ that the number of different words given in response to one hundred selected stimulus words may be used as "a fairly reliable measure of the intelligence and degree of education of a patient." The test according to Fuhrmann is applied twice in every case, the interval between the two sittings being at least four weeks. "In very intelligent and well educated persons every 100 stimulus words almost always evokes in the first test 95—100 different associations; in the less intelligent and in the feeble-minded the same associations are more frequently repeated. In the second test with the same stimulus words—which is really much more important than the first, since even persons of inferior intelligence may reach higher numbers in the first test—the difference in the wealth of the stock of representations becomes plainly evident:

¹ Diagnostik und Prognostik der Geisteskrankheiten, p. 93. Leipzig, 1903.

the man of intelligence will not need to draw on the associations which he gave in the first test, but will produce new ones; the feeble-minded subject will, on the contrary, repeat to a greater or lesser extent the associations of the first test." "In general the associational capacity of an adult person may be taken to be from 80 per cent to 90 per cent. Should the number sink below 70 per cent the suspicion of a pathological condition must then arise; and the higher the subject's degree of education the stronger is this suspicion. In the case of an associational capacity of 60 per cent or less no doubt of its pathological significance can remain any longer."

Our results are not strictly comparable with Fuhrmann's, because we have obtained but one test record from each subject; it may be said, however, that the results of a single test in each case do not show any considerable differences, corresponding to education or age, in the variety of responses. Further, dementing psychoses, with the exception of epilepsy, show on the whole no diminution in the number of different reactions, although in individual cases this number falls considerably below the general average; and in such cases the diminution may be dependent upon stereotypy or perseveration, and not necessarily upon reduction in the stock of representations.

It would appear from our results that pathological mental states are apt to manifest themselves by a tendency to give reactions belonging to types of inferior values rather than by diminished variety of responses.

We show in Table VI. the numbers of different responses given by our groups of normal and insane subjects, expressed in figures giving for each group the median and the average.

TABLE VI.

	Med.	Av.
80 normal subjects, common school education; records containing not over 10 individual reactions	85	84.5
66 normal subjects, collegiate education; records containing not over 10 individual reactions	87	86.5
48 normal subjects, school children; records containing not over 10 individual reactions	87	84.9
53 normal subjects; records containing not under 15 individual reactions...	90	88.7
108 cases of dementia præcox	87	84.2
33 cases of paranoic conditions.....	80	80.5
24 cases of epilepsy.....	78½	75.8
32 cases of general paresis.....	84½	82.4
32 cases of manic-depressive insanity.....	87	85.4

§ 10. CO-OPERATION OF THE SUBJECT.

In our work with insane subjects we encountered many cases in which we were unable to obtain satisfactory test records owing to lack of proper co-operation. Some subjects seemed to be either too confused or too demented to be capable of understanding and following the instructions given them. Others were for one reason or another unwilling to co-operate. It is important to distinguish inability from unwillingness to co-operate, since the former indicates in itself an abnormal state of the mind, while the latter is quite often shown by normal persons.

A subject may co-operate to the extent of giving a single word in response to each stimulus word, and yet fail to co-operate in some other particulars.

He may, instead of giving the first word suggested to him by the stimulus, suppress the first word more or less systematically, and give some other word which may seem to him more appropriate. This probably occurs very often, but does not seem to render the results less serviceable for our purpose.

Further, a subject may react by words related not to the stimulus words, but to each other, thus simulating perseveration; or he may react by naming objects within reach of the senses, thus appearing to be distracted; or he may give only sound reactions.

There is, in fact, no type of pathological reactions which a normal person may not be able to produce more or less readily at will, though in the case of incoherent reactions considerable mental effort may be required, and the end may be attained only by regularly rejecting the first and some subsequent words which are suggested by the stimulus.

In view of these considerations we are led to conclude that the association test, as applied by our method, could not be relied upon as a means of detecting simulation of insanity in malingerers, criminals, and the like.

§ 11. SUMMARY.

The normal range of reaction in response to any of our stimulus words is largely confined within narrow limits.

The frequency tables compiled from test records given by one thousand normal subjects comprise over ninety per cent of the normal range in the average case.

With the aid of the frequency tables and the appendix normal reactions, with a very few exceptions, can be sharply distinguished from pathological ones.

The separation of pathological reactions from normal ones simplifies the task of their analysis, and makes possible the application of a classification based on objective criteria.

By the application of the association test, according to the method here proposed, no sharp distinction can be drawn between mental health and mental disease; a large collection of material shows a gradual and not an abrupt transition from the normal state to pathological states.

In dementia præcox, some paranoic conditions, manic-depressive insanity, general paresis, and epileptic dementia the test reveals some characteristic, though not pathognomonic, associational tendencies.

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It is with pleasure that we acknowledge our indebtedness to the many persons who have assisted us in collecting the data for this work.

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APPENDIX TO THE FREQUENCY TABLES

General Rules.

1. Any word combination which is to be found in the frequency tables, but only in the reverse order from that in which it occurs in a test record under consideration, is to be classed as a normal reaction.

2. Any reaction word which is a synonym or an antonym of the corresponding stimulus word is to be classed as normal.

1. TABLE

Any food or meal.

Any room or apartment.

Any article of table linen, china, silver, or furnishings.

Word designating any special variety of tables.

Any word pertaining to appetite.

2. DARK

Any source of illumination.

Any enclosure from which light is wholly or in a large measure excluded.

Word referring to physiological pigmentation of tissues exposed to view.

Any division of the diurnal cycle.

Any color or coloring material.

Anything which obscures light.

3. MUSIC

Any musical instrument.

Name of any composer or musician.

Special or general name of any musical composition.

Term designating rhythm, tempo, loudness, or pitch.

Name of any dance.

Term expressing subjective effect of music.

4. SICKNESS

Term designating any disease, symptom, injury, or physiological function.
Any cause of disease.

Any means or measure of treatment of disease.

Any anatomical organ or region.

Word denoting mode of termination, results, consequences, or indirect effects of disease.

Any term of prognostic import.

Common or proper name of any person.

5. MAN

Word denoting or implying age of a person.

Any of the well-known male sexual characteristics.

Occupation or profession more or less peculiarly masculine.

Word pertaining to familial relationships or domestic organization.

Word pertaining to sexual relationships; any word denoting the opposite sex.

The proper name of any male person.

Any article of male apparel.

6. DEEP

Any vessel or container.

Any natural or artificial body of water.

Any depression of surface.

Any object naturally situated or often artificially placed at a comparatively great distance below the surface.

Any act of progress from surface to depth.

7. SOFT

Any article of food.

Any fabric.

8. EATING

Any article of table linen, china, or silver.

Any organ of digestion; any function of nutrition.

Any article of food; any meal.

Any private or public eating place.

Word denoting taste.

9. MOUNTAIN

Name of any mountain, mountain range, or mountainous country.

Word pertaining to shape, geological composition, fauna, or flora of mountains or mountainous regions.

Any term of physical geography.

10. HOUSE

Any place of house location.
Any part of a house.
Any material used in the construction of a house.
Any part of the process of construction of a house.
Laborer or mechanic having to do with the construction of a house.
Any commercial term pertaining to ownership, taxes, mortgages, sale, renting, or occupancy of a house.
Any article of furniture.

11. BLACK

Any object or substance that is always or often black or dark in color.
Any color.
Word denoting limitation or obscuration of light.
Any word clearly related to the word Black used as a proper name.

12. MUTTON

Any article of food; any meal.
Any animal, or class or group of animals, whose meat is used for human consumption as food.
Any article of table linen, china, silver; any cooking utensil.
Word designating any person engaged in the preparation of meats for consumption.
Word denoting any process employed in the preparation of meats for consumption.

13. COMFORT

Any agreeable or disagreeable subjective state.
Any object, act, or condition that contributes to comfort or produces discomfort.

14. HAND

Any simple function of the hand; work requiring special manipulation.
Word denoting skill or any degree of skill.
Any part or any tissue of the body.

15. SHORT

Any word involving the concept of duration.
Common or proper name of any person.
Any word denoting shape, relative or absolute dimension, or distance.
Any object in which characteristically one dimension exceeds any other.

16. FRUIT

Any article of food; any meal.

Any process employed in the cultivation of fruits or in their preparation for consumption.

Word designating any person engaged in the cultivation of fruits or in their preparation for consumption.

Any article of table linen, china, or silver.

17. BUTTERFLY

Any bird, worm, or insect.

Any flower.

Any color.

18. SMOOTH

Any object possessing a smooth surface as a characteristic feature.

Any fabric.

19. COMMAND

Word denoting any means of influence of one mind upon another intended to produce acquiescence.

Word denoting or implying acquiescence or lack of it.

Term applied to any commanding officer or to any person in authority.

20. CHAIR

Any article of furniture.

Any room or apartment.

21. SWEET

Any substance having a sweet taste.

Common or proper name of a child or woman.

22. WHISTLE

Any instrument or any animal producing a shrill musical sound.

23. WOMAN

Word denoting or implying age of a person.

Any of the well-known female sexual characteristics.

Occupation or profession more or less peculiarly feminine.

Word pertaining to familial relationships or domestic organization.

Word pertaining to sexual relationships; any word denoting the opposite sex.

Name of any female person.

Any article of female apparel.

24. COLD

Name of any location characterized by low temperature.
Any illness or symptom which may be caused by exposure to cold.
Any division of the annual cycle.
Any food that is always or often served cold.
Any means or measure of protection against cold.
Any state of the natural elements causing a sensation of cold.
Word denoting subjective characterization of or reaction to cold.

25. SLOW

Any means or manner of locomotion.
Any word involving the concept of rate of progress with reference either to time or to intensity of action.
Common or proper name of any person.

26. WISH

Word implying fulfillment of a wish either by achievement or through acquiescence.
Word implying non-fulfillment of a wish.
Word denoting any state of longing or anticipation.
Word denoting any state free from longing or anticipation.
Word denoting a prayer or request.
Word denoting a state of happiness.

27. RIVER

Any body of water.
Any part of a river.
Any plant or animal living in rivers.
Any term of physical geography.
Any vessel or contrivance for navigation.

28. WHITE

Any object or substance that is always or often white or very light in color.
Any color.
Any word clearly related to the word White used as a proper name.

29. BEAUTIFUL

Any word denoting aesthetic pleasure.
Name or any female person.
Any product of the fine arts or of decorative handicraft.
Any decorative plant or flower.
Any article of attire.
Natural scenery.
Any division of the diurnal cycle.

30. WINDOW

Any word pertaining to illumination.

Word pertaining to movements of air.

Any attachment to a window for the control of transmission of light or air.

Any building or apartment.

31. ROUGH

Any object or substance which is characteristically rough to the touch.

Word denoting or implying irregularity of surface.

Any skin lesion which may impart to the skin the quality of roughness.

Any word implying carelessness, lack of consideration, or crudeness; any word used to designate action or conduct which may be characterized as careless, inconsiderate, or crude.

32. CITIZEN

Any word pertaining to political organization, or to factors either favorable or unfavorable to it.

Any term or proper name of political geography.

Common or proper name of any male person.

33. FOOT

Any means or manner of locomotion involving the use of the feet.

Any part or any tissue of the animal body.

Any article of foot-wear.

Any way constructed or used for walking.

Any unit of linear measure.

34. SPIDER

Word employed to designate subjective characterization of or reaction to an object of dislike.

Any insect.

Word pertaining to the characteristic habits of spiders, with reference either to location and construction of nest, or to manner of catching prey.

35. NEEDLE

Any material used in making clothes.

Any special sewing operation; any occupation in which sewing constitutes part of the work.

Any special kind of needles.

Any instrument which is used in connection with a needle in any operation, or of which a needle forms a part.

36. RED

Word which may be used to express subjective characterization of the red color.

Any object or substance which is always or often red in color.

Anything which is by convention or common usage connected with the red color.

Any organ, tissue, or lesion, exposed to view, which may have a red color imparted to it by the blood or by physiological pigment.

Any color or coloring material.

Any word implying light through incandescence.

37. SLEEP

Word denoting somnolence or a state of lowered consciousness; anything which is a cause of somnolence or of lowered consciousness; anything which induces a desire to sleep.

Word denoting a state of active consciousness or a transition from lowered to more active consciousness.

Any division of the diurnal cycle.

Any word more or less commonly used to characterize sleep in any way.

Any article of bedding, bed-linen, or night-clothes.

Any article of furniture used for sitting or lying.

38. ANGER

Any affective state; any common demonstration of emotion.

Any common cause or provocation of anger.

Action or conduct caused by anger; word used to characterize such action or conduct.

39. CARPET

Any material of which carpets are made.

Any article of house furniture, hangings, or decorations.

Word denoting home, house, or any part of a house.

Word pertaining to the manufacture or care of carpets, or denoting a person engaged in the manufacture, sale, or care of carpets.

Any country especially noted for the manufacture of carpets or rugs.

Any color.

40. GIRL

Word denoting or implying age of a person.

Any of the well-known female sexual characteristics.

Occupation or profession more or less peculiarly feminine.

Word pertaining to familial relationships or domestic organization.

Word pertaining to sexual relationships; any word denoting the opposite sex.

Name of any female person.

Any part of a person's body.

Any article of female apparel.

41. HIGH

Any word denoting or implying skill, training, achievement, or position.
Any word denoting or implying valuation.
Any architectural structure.
Any object of which the vertical dimension characteristically exceeds any other.
Any act of progress from a lower to a higher level.
Name of any mountain or mountain range.
Anything characteristically situated at a high level.
Anything characteristically variable in height.

42. WORKING

Any occupation, profession, art, or labor.
Direct results or consequences of work.
Any place of employment.
Rest, recreation, inaction, or disinclination to work.
Word denoting energy, material, capital, equipment.

43. SOUR

Any substance or object which is always or often sour in taste.
Any word denoting a taste or flavor quality.

44. EARTH

Any substance which enters into the composition of soil.
Word pertaining to the utilization or cultivation of natural resources; any product of agriculture.
Any term of physical geography, geology, mineralogy, meteorology, or astronomy.

45. TROUBLE

Any affective state.
Any general cause of active emotional states.
Any common manifestation of emotion.
Word denoting or implying defeat.
Word denoting or implying caution or lack of it.
Any task.

46. SOLDIER

Word pertaining to military organization.
Word pertaining to any military operation.
Word pertaining to military discipline or to military decoration.
Any article of military or naval equipment or attire.
Common or proper name of any male person.
Name of any country.
Word pertaining to political organization.

47. CABBAGE

Any article of food; any meal.

Any article of table linen, china, silver; any cooking utensil.

Any process of cooking.

Word used to designate any person engaged in the cultivation of cabbages or in their preparation for consumption.

48. HARD

Any solid article of food.

Word denoting or implying impact.

Any task or labor.

Any substance which is hard or unyielding.

Any agency or process by which a substance is solidified or hardened.

Any article of furniture used for sitting or lying.

Any trait of disposition characterized by lack of readiness to yield or lack of consideration for others.

49. EAGLE

Any bird.

Any piece of currency.

Anything in connection with which the word eagle is used in a symbolic sense.

50. STOMACH

Any anatomical organ or region.

Any article of food; any meal.

Word pertaining to ingestion and assimilation of food.

Term denoting health or disease; any medicament.

51. STEM

Any object which has a stem.

Any part of a plant.

Any object which is long, slender, and more or less rigid.

52. LAMP

Any means or source of illumination.

Word denoting or implying illumination.

53. DREAM

Any product of imagination.

Any psychical phenomenon; any part of the psychical organ.

Word denoting or implying unreality or uselessness.

Word denoting or implying mystery or occultism.

Any division of the diurnal cycle.

Any article of bedding, bed-linen or night-clothes.

Any article of furniture used for sitting or lying.

Any narcotic substance.

54. YELLOW

Word which may be used to denote subjective characterization of the yellow color.

Any object or substance which is always or often yellow in color.

Any color or coloring material.

55. BREAD

Any article of food; any meal.

Any article of table linen, china, or silver; any cooking utensil.

Any private or public eating place.

Word pertaining to ingestion and assimilation of food.

Any ceremony in connection with which bread is used.

56. JUSTICE

Any word implying crime or tendency to crime, legal trial, retribution or lack of it, or repentance.

Any officer of the law.

Word pertaining to judiciary organization.

Word denoting any kind of ethical relationship.

Any deity.

The name of any justice or judge.

Any function of a judicial authority.

Any word denoting or implying equality.

57. BOY

Word denoting or implying age of a person.

Word pertaining to familial relationships or domestic organization.

Word pertaining to sexual relationships; any word denoting the opposite sex.

Common or proper name of any male person.

Any part of a person's body.

Any article of male apparel.

Any common boys' toy or game.

Word pertaining to educational organization.

58. LIGHT

Any source, apparatus, or means of illumination.

Any color or coloring material.

Word implying light through incandescence.

Any term of optics; any optical phenomenon.

Any object or substance which is characteristically light in weight.

59. HEALTH

Any emotion; any common manifestation of emotion.
Any disease or symptom.
Word pertaining to prevention or treatment of disease.
Word pertaining to any normal bodily function.
Word pertaining to the preservation of health.
Word denoting or implying a state of health.
Any athletic sport or form of exercise.
Any anatomical organ or region.

60. BIBLE

Name of any personage mentioned in the Bible.
Any religion or religious denomination.
Any name or attribute employed in reference to the Deity.
Any article or act of religious ritual.
Word denoting or implying belief, disbelief, or doubt.
Any term of theology.

61. MEMORY

Word pertaining to operations, faculties, endowment, training, or condition of the mind.
Word denoting any degree of accuracy.
Word denoting the cranium; any part of the psychical organ.
Word pertaining to the past.
Any word implying transiency.
Any subject of study involving the exercise of memory.
Any method or means for the reinforcement of memory.
Any of the senses.
Word denoting retention.

62. SHEEP

Any animal raised or hunted for clothing material, for food, or for its services as a beast of burden.
Any product manufactured from the skin or wool of sheep.
Any of the more or less distinctive characteristics of sheep.
Any food product derived from sheep.

63. BATH

Word denoting or implying an effect of bathing on the body.
Any body of water.
Any kind of bath; any part of bath, lavatory, or toilet equipment.
Any material of which a bathing equipment is largely made.
Word denoting a state of partial or complete undress.
Any beach or bathing resort.
Any aquatic feat of gymnastics.

64. COTTAGE

Word pertaining to landscape gardening.

Any place of cottage location.

Any part of a house; any color.

Any material used in the construction of a cottage.

Any laborer or mechanic having to do with the construction of a cottage.

Any part of the process of construction of a cottage.

Any commercial term pertaining to ownership, taxes, mortgages, sale, renting, or occupancy of a cottage.

Any article of furniture.

65. SWIFT

Any means or manner of locomotion.

Word denoting or implying motion or rate of motion.

Any animal or familiar object characterized by rapid locomotion.

Any word clearly related to the word Swift used as a proper name.

66. BLUE

Word which may be used to express subjective characterization of the blue color.

Any object or substance which is always or often blue in color.

Anything which is by convention or common usage connected with the blue color.

Any organ, tissue, or lesion, exposed to view, which may have a blue color imparted to it by the blood or by physiological pigment.

Any color or coloring material.

67. HUNGRY

Any animal.

Any article of food; any meal.

Word denoting taste or flavor.

Word denoting or implying privation or torture.

Any article of table linen, china, or silver.

Any private or public eating place.

Any organ of digestion; any function of nutrition.

Word designating any person engaged in the preparation or sale of foods.

68. PRIEST

Any religion or denomination.

Any article or act of religious ritual.

Any term of theology.

Word denoting or implying sanctity.

Word denoting or implying belief, disbelief, or doubt.

Word pertaining to church organization.

Proper name of any priest.

Any article of clerical attire.

Any profession more or less peculiarly masculine.

69. OCEAN

Any body of water.
Any plant or animal living in the ocean.
Any term of physical geography.
Any vessel or contrivance for navigation.
Word pertaining to navigation; any nautical term.
Common or proper name of any place bordering on the ocean.
Any aquatic feat of gymnastics.

70. HEAD

Any organization which has a person occupying the highest office.
Word denoting or implying the highest office of any organization.
Any intellectual faculty, quality, or operation.
Any part of the head.
Any pathological condition affecting the head.

71. STOVE

Any part of a stove.
Any kitchen utensil.
Any artificial heating apparatus; any fuel.
Any manner of cooking; any person engaged in cooking food.
Any article of household furniture.

72. LONG

Any word involving the concept of duration.
Word denoting shape, relative or absolute dimension, or distance.
Any object in which characteristically one dimension exceeds any other.

73. RELIGION

Any religion or denomination; the name of any race or nation.
Any term of theology.
Any branch of metaphysical philosophy.

74. WHISKEY

Any beverage; the name of any brand of whiskey.
Any material of which whiskey is made.
Word denoting taste or flavor.
Any occasion or ceremony commonly associated with the use of alcoholic beverages.
Word denoting a state of lowered consciousness.
Any physiological or pathological effect of alcohol; also any well known indirect effect.

75. CHILD

Word denoting or implying age of a person.
Word pertaining to familial relationships or domestic organization.
Name of any person.

Any part of a person's body.
Any article of a child's apparel.
Any common child's toy or game.
Word pertaining to educational organization.
Any word descriptive of the natural physical or mental make-up of a child, or of the rate or degree of physical or mental development.
Word pertaining to any custom or ceremony connected with the birth or rearing of children.
Any term of obstetrics.
Any word clearly related to the word Child used as a proper name.

76. BITTER

Any substance having a bitter, sour, sweet, or salt taste, or a complex taste quality which may be characterized as strong.
Word denoting a taste or flavor quality.
Any organ of taste.
Any word in connection with which the word bitter may be used in the sense of poignant.

77. HAMMER

Any tool or weapon.
Any trade involving the use of a hammer.

78. THIRSTY

Any beverage.
Any animal.
Word denoting taste or taste quality.
Any part of the upper end of the digestive tract.
Any drinking place; any container of a beverage.
Any fruit; any dessert.
Any food ingredient commonly known to excite thirst.

79. CITY

Name of any division of political geography.
Any architectural structure.
Any part of a city.
Word pertaining to the political organization of a city.

80. SQUARE

The name of any city.
The name of any square in a city or town.
Any geometrical figure or part of one.
Any object that is always or often square in shape.
Any device used in the arts for measuring angles, arcs, or distances between points.
Any part of a carpenter's or draughtsman's square.
Any trade involving the use of the square.

81. BUTTER

Any article of food; any meal.
Any article of table linen, china, or silver; any cooking utensil.
Any process of cooking.

82. DOCTOR

The name of any physician.
Any medical speciality or practice.
Any medical or surgical procedure.
Any therapeutic remedy or method.
Any organization for the treatment of disease.
Name of any injury or disease.

83. LOUD

Any sound or sound quality.
Any part of the human vocal apparatus.
Any act of vocalization.
Any musical instrument.
Any apparatus for making sound signals.
Word denoting renown or commendation.

84. THIEF

Word denoting crime or wrongdoing.
Word denoting any circumstance propitious for theft.
Any common measure for the prevention or punishment of crime.
Any judicial, police, or penal authority.
Any readily portable article of value.
Word denoting renown.

85. LION

Word denoting or implying fear.
Any animal.

86. JOY

Word denoting a state, quality, faculty, or function of the mind.
Any common manifestation of emotion.
Any occasion, act, or means of recreation or of pleasurable excitement.

87. BED

Any article of bedding, bed linen, or night-clothes.
Any article of furniture.
Any living room, apartment, or building.
Any part of a room.
Any division of the diurnal cycle.
Any material of which beds are made.
Word pertaining to sleep or rest.

88. HEAVY

- Word denoting or implying weight or lightness.
Any object or substance which characteristically possesses the quality of either great weight or marked lightness.
Any means of support or suspension.
Any fabric; any article of clothing or bedding.
Word denoting something to be carried or transferred.
Any painful emotion.
Word denoting a state of lowered consciousness.

89. TOBACCO

- The name of any brand or variety of tobacco.
Term denoting any common quality of tobacco.
Any physiological or pathological effect of tobacco.
Any word which expresses subjective characterization of tobacco.

90. BABY

- Word denoting or implying age or size of a person.
Word pertaining to familial relationships or domestic organization.
Name of any person.
Any part of a person's body.
Any article of a child's apparel.
Any common child's toy or game.
Word pertaining to any custom or ceremony connected with the birth or rearing of children.
Any term of obstetrics.

91. MOON

- Any term of astronomy.
Word denoting or implying illumination or obscuration of light.
Any division of the diurnal cycle.

92. SCISSORS

- Any operation or handicraft involving the use of scissors.
Any fabric; any article of clothing.
Any metal of which scissors are made.
Any tool for cutting, piercing, or sharpening.
Any operation of cutting, piercing, or sharpening.

93. QUIET

- Any place where silence usually prevails or is enforced.
Word denoting or implying a state of lowered psychical activity or of psychical inhibition.
Word denoting heightened psychical activity.
Any word pertaining to the emotions.

94. GREEN

Word which may be used to express subjective characterization of the green color.

Any object or substance which is always or often green in color.

Anything which is by convention or common usage connected with the green color.

Any color or coloring material.

Any plant, collection of plants, or part of a plant.

Any word clearly related to the word Green used as a proper name.

95. SALT

Any article of food that is usually seasoned with salt; any seasoning; any relish.

Any article of table linen, china, or silver.

Any process of cooking.

Any term of chemistry.

96. STREET

Name of any street or city.

Any part of a street.

Any building.

Any manner or means of locomotion commonly employed in traveling through streets.

97. KING

Any name of the Deity.

The proper or common name of any ruler of a nation or of a smaller municipality.

Any nation or country.

Any title of nobility.

Any word clearly related to the word King used as a proper name.

98. CHEESE

Any article of food; any meal.

Word denoting any variety of cheese.

Word pertaining to taste, flavor, or odor.

Word pertaining to appetite.

Any article of table linen, china, or silver.

99. BLOSSOM

Any plant, collection of plants, or part of a plant.

Any term of botany.

Any division of the annual cycle.

100. AFRAID

Any affective state; any common demonstration of emotion.

Any common object of fear.

Word denoting or implying danger, courage; any means of defense or protection against danger.

REMARKS, LARGELY STATISTICAL, REGARDING THE TREATMENT OF ALCOHOLICS.¹

By A. R. MOULTON, M. D.

Since my connection with the Pennsylvania Hospital for the Insane, August, 1891, there have been 219 cases, or 174 different persons, of alcoholic habit treated in the department for men of that institution. Of that number 31 were also addicted to a drug habit, chiefly that of morphine. Seven also took morphine and cocaine; five were cocaine habitués; one took morphine and heroin; one morphine, heroin and cocaine; while one drank freely of Jamaica ginger, as well as whiskey; and one had grafted on a habit from taking an advertised cure for alcoholism. There was reason to believe that the nostrum contained opium, and possibly cocaine. There have been numerous instances in which the patients resorted to bay rum, cologne and hair tonic where liquor could not be obtained, but I have not found any case in which such substances have been used when beer or whiskey, which are the usual alcoholics resorted to, were available.

As it is the rule not to take habit cases as voluntary patients who do not fully understand the nature of their self-commitment, no cases of delirium tremens have been received, and the number who have developed delirium tremens after admission does not exceed three.

I am not aware that the habit has been formed in a single instance through taking of liquor on the advice of a physician.

There was a history of intemperance in the ancestry, chiefly in the parents, in 21 instances, while there was insanity in the near ancestry in only seven cases, so far as could be learned.

In the family of one man who was numerous times in the hospital there were several members addicted to the use of alcohol, four brothers being drinkers, three of whom died of alcoholism.

In one case there was a history of excessive alcoholic indulgence by the father, mother and six brothers. In one instance a twin was also an alcoholic. Three others had brothers who drank im-

¹ Read before the Philadelphia Psychiatric Society, March 11, 1910.

moderately. One had an insane child, but as the average age of the patients on admission was only 38 years, it is not unreasonable to expect that many more of the offspring of the group may become insane through the inheritance imparted by a drunken father. Of the number of strumous or feeble-minded offspring I have no record, but I know it is considerable.

The youngest patient was 19 years of age; the eldest was 67 years old. The largest number of cases occurred between 30 and 40 years of age—88 in that decade. There were only 37 patients over 50 years of age.

As to the civil condition, 94 were married, 50 were unmarried, 3 were divorced, 10 were widowers, while in 17 cases the records make no mention as to this state.

Regarding the occupations of the patients, they were various, as might be expected. The list is headed by physicians, of whom there were 30, probably due to the fact that doctors having confidence in the hospital turn to it readily for aid. There were 24 lawyers. Perhaps they sought aid where their attention had been attracted by the success of our defence in habeas corpus proceedings. There were likewise 24 clerks. Of liquor dealers we have treated 15, and in this connection I would remark that I have heard no stronger condemnation of the habitual indulgence in alcohol than that uttered by persons who sell it. Of those who had no occupation we have treated 14. Our list comprises many occupations in which each has a single representative, but there have been two priests and one minister who have voluntarily sought treatment.

The number who have undergone treatment elsewhere is considerable. Ninety-seven had been in regular hospitals, many of them over and over again. Twenty-five had taken cures at Keeley institutes, more than half of them having been "cured" repeatedly, while the same might be remarked of nine others who had tried the Oppenheim establishments. Three had been brave enough to trust themselves to Muldoon, once each.

It can be readily understood that with such patients some of them have been more than once in the hospital. There were 26 such. One had been in the institution 12 times within a period of little less than 10 years. During the same time he was cared for on numerous occasions elsewhere, and is still a frequent guest at St. Joseph's.

One has placed himself in our care on eight occasions, and for many months now has lived in a hotel with a nurse to control (though she has not prevented) his drinking.

Another, after resorting to the hospital six times in three years, and having been in other hospitals, went to live in lodgings, and died there of alcoholism.

Still another who voluntarily committed himself five times in less than three years, and was known to have been subsequently in St. Joseph's, died in St. Mary's.

The only case of *real* dipsomania, by which I mean a morbid condition in which there is periodically an absolutely irresistible impulse to drink, was that of a gentleman of the highest integrity, a most successful business man, the superintendent of a Sunday school, who came to the hospital eight times. His attacks occurred every six months, and lasted about two weeks, when he not only had no desire for liquor, but could not be induced to take a drop. He died suddenly in his home of heart disease, after taking active part in the successful city party campaign.

One patient, a lawyer, who committed himself three times in his earnest endeavor to have his self-control established, has been three years without drinking, whereas for years previous he was seldom sober. His practice is largely among those who frequent taverns and he is necessarily often in bar-rooms. If invited to drink he takes ginger ale. He may be playing with fire, but he appreciates his danger and has for three years maintained the resolve not to take his *first* drink.

There has been a handicap in caring for habit cases due to the fact that they remain only a short time under treatment, too many showing a disposition to use the hospital simply as a place in which to sober up. It is the rule to decline the admission of voluntary patients who will not agree to remain at least a month, and the average residence of our voluntary cases was 2 4/10 months.

Previous to May 10, 1893, voluntary patients signed for only seven days, but on the above date the law was amended to a period not exceeding 30 days.

On April 16, 1903, an act was approved whereby persons habitually addicted to the use of alcohol or drugs might be committed for a period not exceeding a year. They could only be dis-

charged by the committing authority, a judge or magistrate, or on the expiration of the committal. It was found that some *magistrates* yielded to the importunity of the patients and in discharging them did so with the avowed purpose of giving the individual "another chance," although the commitment at the time was supposed to be a last resort. Patients were discharged after 10 days, 12 days, one month, etc., so that in these cases the object of the law of long continued enforced abstinence was weakened. Cases committed by judges were as a rule allowed to remain from 6 months to a year. On May 28, 1907, the law was amended so that judges only can commit and discharge habitués. We have received 24 cases under the "H. D." Act, or 19 different persons, for three have been committed more than once. One of these was handicapped by being born rich and by not having had good family training. He never had any occupation, was unruly, received little or no parental guidance, became early dissipated, was luetic, and indulged in morphine and cocaine as well as alcohol. He had no desire to reform, and though he had no liquor or drugs after the first few weeks of his residence, remaining a full year on two different occasions, he resumed his former habits very quickly on discharge and is now in a hospital where he has been for several months.

A patient who was discharged by a magistrate after being in the hospital three months, left the hospital with the mental reservation that he would go to Camden and have a good spree. He did not succeed in getting out of the city before he was intoxicated, and as soon as he could be located (for so-called friends secreted him) he was again committed and remained the full year. He did well for 10 months, holding a responsible position in one of the concerns owned by his father, when he lapsed. Committed again, he remained four months, when he was discharged. He controlled himself for a year, when he again drank. He was found dead in bed at his lodgings. His father had been formerly intemperate; indeed he received treatment for alcoholism at St. Agnes' while his son was confined at the Pennsylvania Hospital.

These members of the committed class have not been representative of the whole. True, most of the patients have lapsed, but they are extreme cases who have not been taken in hand by the law until as a last resort. One who for the first few weeks re-

garded his detention as a great indignity on discovering how much better he felt following the discontinuance of stimulants became a very pleasant and co-operative patient. He has been a total abstainer now for nearly two years, has attended to business, and has induced several of his friends to "take treatment." Previous to treatment he nearly ruined his business and was a menace to his family.

Several others of this class have done well on discharge, taking up occupations that had been sadly neglected and pursuing them efficiently for periods varying from a few months to five years.

The inquiry may be made "is it worth while to expend strength and sympathy on this class of patients?" Habit cases are proverbially of weak mental organization, are easily led astray, and many of them are benefited only while kept from indulgence. As a rule, they have little moral strength, do not really desire to reform, and quickly relapse, especially on return to old environment. But keeping them sober for even a month or two is helpful, for when free from the effects of liquor and away from bad influences they are often charming men. Then, too, a considerable portion will again become producers or will take their place in society. The relatively small number who do not relapse is sufficient reward for all this effort, and I believe it *is* worth while. But there is another and larger number who are benefited by the labor expended on the unfortunate ones. I refer to the relatives and friends; and oftentimes the sorrowing members of the family gain courage and renew their efforts, perhaps for a livelihood, while the habitué is kept from harm, or maybe while he is being restored. The gratitude of afflicted parents, wives or children is no mean reward.

As to the treatment, little in an instructive way can be said before this audience. These cases come to us to get over a habit, and we proceed to get them over it. We do not as a rule cut off the stimulant at once; but alcoholics, and drug cases as well, usually try to make the doctor believe they are taking much more liquor or drugs than is the case. They are apt to be very untruthful. Beginning with about half the quantity they aver they are consuming, we determine if *that* is sufficient to keep them reasonably comfortable. We seldom have to increase it, but having determined what is required we maintain that amount for a day

or more until they have become accustomed to the prescribed quantity, then we make a reduction and wait for the patient to become accustomed to the allowance before reducing again. Going steadily on in this way the liquor is usually stopped entirely within a week, more often within three or four days. Cocaine can be suspended relatively quickly, about as soon as whiskey. Morphine as a rule requires a more gradual and longer period of reduction, but it is almost never the case that the patient is taking any at the end of the second week. This has been accomplished without undue suffering on the part of the patient, nor has he collapsed. From the beginning he has been given strychnia nitrate, which stimulates and holds up the patient so that there is little longing for alcohol, and great attention has been given to his organs. His excretions have been kept active, he has taken large quantities of effervescent waters, or simply pure water, and ginger ale, and after the first or second day resort has been had to hot baths, often to steam baths or to the full Turkish bath. Frequently these patients insist that their greatest benefit came from the natatorium, and on many occasions its special advantages have been held out by them to friends whom they wish to see helped.

Much attention is given to the diet, and as soon as the poison has been eliminated and no more given, the patient rapidly puts on flesh, and becomes ruddy and strong. Hypnotics are seldom used, or if required at all are exhibited only a few times to break the habit of wakefulness.

Patients of this kind need building up, for as a rule they have gotten themselves into very poor general health, and reformation depends quite as much upon corrected metabolism and improved nutrition as upon a determined desire to lead a correct life.

It may not be out of place to say just a word about the need of a State hospital for the treatment of alcohol and drug addiction. There is a very large number of men, and some women, in this commonwealth who should have the kind of care that such an establishment could give who have not the means to go to a private institution. Could they be detained a considerable length of time, made to contribute to their support by work, and looked after when on parole, as is done in Massachusetts, great good, it is believed, would be accomplished.

Proceedings of Societies.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

PROCEEDINGS OF THE SIXTY-SIXTH ANNUAL MEETING.

WASHINGTON, D. C., TUESDAY MAY 3, 1910.—FIRST SESSION.

The Association convened at 10 a. m., in the Parlor Hall of the New Willard Hotel, Washington, D. C., and was called to order by the President, Dr. William Francis Drewry, of Petersburg, Va.

THE PRESIDENT.—The first order of business, ladies and gentlemen, is the address of welcome. This will be made by Dr. William C. Woodward, Health Officer of the District of Columbia, whom I take pleasure in presenting to the Association.

DR. WILLIAM C. WOODWARD.—On behalf of the citizens of Washington, I bid you welcome. And yet in doing so I am much embarrassed, for I am but bidding you welcome to what is already your own. For no citizen of the United States but that is a part owner of its capital city; no citizen but that carries its keys in his pocket and always has the freedom of the town. But if part ownership of the city carries with it certain rights and privileges, it carries also certain responsibilities and duties; responsibility for its physical, intellectual, moral, and spiritual welfare; the duty to see to its maintenance and improvement in all that pertains to human health and happiness, and to see that justice in the Federal District is impartially administered and the rights of the citizens and of the temporary sojourner jealously safeguarded. Nothing else will do. And health, and happiness, and justice, and the sanctity of individual rights are nowhere else so intimately interwoven as in the field of activity occupied by this Association.

Before an audience such as this it may be folly for me to venture into psychology or psychiatry, certainly, at least, into any part of those fields where your work and mine do not overlap. It is, however, concerning just two such points of contact that I want to speak this morning, not with any idea of conveying to you information, but rather in the way of an appeal for help. I want to call your notice, first, to the situation here in the national capital with respect to the commitment of the insane, and second,

to urge that the technical knowledge of the alienist be carried in the future to a greater extent than in the past to the outer side of institutional walls, not so much with a view to the cure of insanity but with a view to its prevention.

In so far as relates to the treatment of mental disorders within the walls of special institutions organized to care for such maladies, the city of Washington will yield to no other community. The splendid work begun so long ago by the men who have been responsible for the management of the Government Hospital, and so ably carried on now by one of your own number, Dr. William A. White, speaks for itself. Those not familiar with this hospital and its works should by all means avail themselves of the opportunity to visit it while they are in the city. But outside of the walls of the hospital we are still in the dark ages. The insane man is a quasi-criminal. If a man suffers from any other disease he is sent to the proper hospital by the board of charities or by the health department, but if he is insane his commitment is still entrusted to the police. Whether he is or is not sick is determined by a jury of laymen, in open court. He is either guilty or not guilty of being mentally unsound—a patient whose ailment must be determined under the guidance of lawyers, according to the rules of law; not by physicians, according to medical science. We need your help in our efforts to educate the community including your senators and representatives—who, you know are our legislators—to the view that a man suffering from mental disorder should be sent to a hospital and subjected to treatment just as are patients suffering from other diseases, and not otherwise; that is, on the judgment of qualified medical men, subject always, of course, to the same liability, civil and criminal, that is incident to all medical practice, to liability for ignorance, unskillfulness, negligence, or bad faith.

The second matter of which I want to speak is the prevention of mental diseases. We hear much of the prevention of this disease and of that, but almost wholly of diseases that are communicable or that are due to bad air, food, or water. We hear but little of the prevention of that more serious disorder, the one which disables its victims longest, that saps social and business ties, that puts a stain on offspring, and that imposes on the government an enormous outlay of money for the maintenance of the sufferers from insanity. We are not going to touch the problem until somehow or other there is more continuity between the knowledge of the patient in the asylum and of the patient before his admission. Our health departments, or our physicians in charge of hospitals for the insane, or both, must be so organized as to look more closely into the history of the patient even back of the incipency of the disease, so as to learn all that there is to be learned of the conditions under which insanity develops, not only for the better understanding of the disease but for the education of the public. Every case of insanity must be investigated by an inspector

paid for such work just as every case of typhoid fever is now investigated, so that information may be obtained at first hand, complete, and not, as is too often the case, at second and third hand and in a more or less fragmentary manner. The prevention of insanity is as important—possibly more important—than the prevention of smallpox and many other diseases against which we are now expending our force. Let us begin the same vigorous warfare against the one that we are now waging against the other. The fact that the campaign is more difficult is no reason why it should be avoided or deferred, but should but stimulate men to more determined and vigorous action.

If I have consumed your valuable time in telling you things already well known to you, and I undoubtedly have done so, my only excuse is that your capital city wants and needs your help. And on behalf of the medical profession and of the people of the District of Columbia, I pray we may have it.

THE PRESIDENT.—Dr. Woodward has not only given us cordial words of welcome which we appreciate and which make us feel entirely at home, but he has made a most valuable address from practical and scientific points of view. I am sure we have enjoyed and will profit by his remarks. Whenever our Association has met in this city the meetings have been unusually enjoyable and profitable. I am confident that I voice the sentiments of all the members present in thanking Dr. Woodward for the very warm welcome he has extended us.

THE PRESIDENT.—We shall now be glad to have the report of the Committee of Arrangements, Dr. W. A. White, Chairman.

DR. WHITE.—I have very little to report other than appears in the program. About all that is to be reported is the arrangement for going to the Government Hospital for the Insane on Thursday afternoon. We will have two special cars leave from a point near by the New Willard Hotel a few minutes after one o'clock, arriving at the hospital approximately at two. The company will furnish cars accommodating about seventy passengers each, about all of the people who are going. If not, the regular cars run every few minutes from points near by. A light luncheon will be served to those who attend as soon as they arrive at the hospital. The committee has nothing further to report.

THE PRESIDENT.—We extend to Dr. White our thanks for his cordial invitation to visit the Government Hospital for the Insane. I am certain we shall enjoy the trip and our visit to so excellent an institution will afford good object lessons.

The next order of business is the report of the Council, which will be read by the Secretary.

REPORT OF THE COUNCIL TO THE AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

WASHINGTON, D. C., May 3, 1910.

The Council met on the evening of May 2, 1910, in the New Willard Hotel.

The Council has received and transmits herewith the report of the Treasurer for the current year.

We also transmit herewith a statement of the membership of the Association to date.

The Council recommends for election to active membership the following named physicians:

W. L. Athon, M. D., Anna, Ill.; Swepson J. Brooks, M. D., Harrison, N. Y.; Robert G. Cook, M. D., Canandaigua, N. Y.; George V. Dearborn, M. D., Cambridge, Mass.; James L. Greene, M. D., Hospital, Ill.; Presley C. Hunt, M. D., Washington, D. C.; John C. King, M. D., Marion, Va.; George H. Kirby, M. D., New York, N. Y.; John McCampbell, M. D., Morganton, N. C.; James J. Neeley, M. D., Bolivar, Tenn.; John M. Semple, M. D., Medical Lake, Wash.; Fred. W. Terflinger, M. D., Logansport, Ind.; David F. Weeks, M. D., Skillman, N. J.; Tom A. Williams, M. D., Washington, D. C.; William T. Wilson, M. D., Cobourg, Ont.; Frank Woodbury, M. D., Philadelphia, Pa.; Leonard Stocking, M. D., Agnews, Cal.; William W. Skinner, M. D., Geneva, N. Y.; Edward W. Scripture, M. D., New York, N. Y.; William E. Ramsey, M. D., Perth Amboy, N. J.; Henry M. Pollock, M. D., Norwich, Conn.; Clarence Pierson, M. D., Jackson, La.; Edward W. King, M. D., Mendocino, Cal.; F. W. Hatch, M. D., Sacramento, Cal.; F. Clark, M. D., Stockton, Cal.; E. Scott Blair, M. D., Patton, Cal.; R. L. Willis, M. D., Lexington, Ky.

The Council recommends the transfer of the following named associate members to the active class:

William T. Shanahan, M. D., Sonyea, N. Y.; August Hoch, M. D., New York, N. Y.; H. M. Carey, M. D., Spring City, Pa.; Henry P. Frost, M. D., Boston, Mass.

The Council recommends that the following named physicians be elected to associate membership:

George F. Brewster, M. D., Middletown, N. Y.; Horace W. Eggleston, M. D., Binghamton, N. Y.; Alfred Glascock, M. D., Washington, D. C.; Alberta S. B. Guibord, M. D., Westboro, Mass.; Carl J. Hedin, M. D., Augusta, Me.; S. C. Lindsay, M. D., Independence, Ia.; James V. May, M. D., Binghamton, N. Y.; W. S. Osborn, M. D., Pueblo, Col.; Mason W. H. Pitman, M. D., Augusta, Me.; Horace G. Ripley, M. D., Taunton, Mass.; George H. Schwinn, M. D., Washington, D. C.

The Council has received the following applications for active membership. In accordance with the constitution, final consideration of these will be deferred until next year:

Robert S. Carroll, M. D., Asheville, N. C.; George B. Gale, M. D., Butler, N. J.; Arthur S. Hamilton, M. D., Minneapolis, Minn.; D'Orsay Hecht,

M. D., Chicago, Ill.; Arthur P. Herring, M. D., Baltimore, Md.; Daniel P. Hickling, M. D., Washington, D. C.; Ernest Jones, M. D., Toronto, Can.; S. Adolphus Knopf, M. D., New York, N. Y.; Robert L. Richards, M. D., Washington, D. C.; Elizabeth C. Spencer, M. D., Norristown, Pa.; Roy McLean Von Wort, M. D., New Orleans, La.; George H. Riggs, M. D., Ijamsville, Md.

The changes in the membership of the American Medico-Psychological Association during the past year are as follows:

HONORARY MEMBERS.

Former number	24
Died	1
Present number	23

ACTIVE MEMBERS.

Former number	309
Transferred from associate.....	4
Admitted	17
	—21
Resigned	5
Died	9
	—14
Net gain	7
Present number	316

ASSOCIATE MEMBERS.

Former number	127
Admitted	25
	—25
Transferred to active.....	4
Resigned	4
Died	1
	—9
Net gain	16
Present number	143
Total membership May 1, 1910.....	482

Invitations were received from the Board of Trade of Halifax, N. S., and from the Chamber of Commerce of Chattanooga, Tenn., to hold the next meeting of the Association in the cities named.

A communication was received from Amos W. Butler, of Indianapolis, Ind., President of the American Prison Association, inviting this Association to appoint a committee to co-operate with other committees in con-

nection with the International Prison Congress this fall. The Council by vote authorized the President to appoint a committee to act in this capacity.

A communication was received from Charles Jewett, M. D., of Brooklyn, N. Y., President of the Medical Society of the State of New York, inviting the members of this Association to participate in the celebration of the 80th birthday of Dr. Abraham Jacobi, at the New York Academy of Medicine on Friday evening May 6, 1910. The Council directed its Secretary to send a telegram of congratulations in behalf of the members of the Association to Dr. Jacobi on the date named.

The Council makes the following recommendations:

That the dues for the ensuing year be fixed at the usual rate, viz.: five dollars for active members and two dollars for associate members.

That the Secretary be authorized to publish the transactions of this meeting.

That in accordance with custom the Secretary be authorized to reimburse Prof. J. B. Dresslar for his traveling and hotel expenses.

Respectfully submitted,

CHARLES G. WAGNER, *Secretary*.

On motion, which was duly seconded, the report of the Council was accepted and adopted. The names of physicians proposed for election to come up to-morrow in regular course.

THE PRESIDENT.—We will now hear the report of the Treasurer.

REPORT OF TREASURER 1909-1910.

DEBITS.

Balance on hand June 1, 1909.....	\$2,728.13
Dues from active members.....	1,758.75
Dues from associate members.....	299.00
Interest on bank deposits.....	75.42
Gummed lists of members.....	8.50
Copy of Transactions.....	1.00
Total	\$4,870.80

CREDITS.

1909		
June 10.	B. D. Evans, expenses of Prof. Riley.....	\$26.15
	11. Utica State Hospital, printing program.....	71.65
	18. L. M. Farrington, stenographer, expenses at annual meeting 1909.....	41.09
July 13.	J. R. Heilman, clerk office of Secretary 1908-1909....	11.88
	14. AMERICAN JOURNAL OF INSANITY.....	100.00
Sept. 10.	H. M. Hurd, M. D., reimbursing for indexing.....	5.00
	20. Mrs. O. R. Bacon, rubber stamps.....	2.00

Oct. 19.	R. J. Powers, postage stamps.....	\$10.00
26.	E. S. Graney, freight.....	2.30
26.	A. J. Kleitz, printing and stamped envelopes.....	37.50
28.	Binghamton Book Mfg. Co., bill book.....	7.00
28.	Pneumatic Stamp Co., rubber stamp.....	.60
28.	E. S. Graney, freight.....	.75
28.	A. J. Kleitz, envelopes.....	11.75
28.	Charles Ricksher, M. D., refund.....	3.00
Nov. 19.	L. M. Farrington, services as stenographer, etc.....	71.90
24.	Lord Baltimore Press Co., Transactions 1908.....	881.28
24.	Lord Baltimore Press Co., reprints, etc.....	12.24
Dec. 27.	O. P. Chase, services in office of Secretary 1909-1910..	5.00
1910		
Mar. 9.	L. M. Farrington, postage for mailing Transactions....	85.00
Mar. 14.	Mersereau Printery, printing preliminary program (1910) envelopes, etc.....	23.22
Apr. 6.	E. S. Graney, freight.....	.70
11.	H. M. Hurd, M. D., reimbursement for indexing.....	5.00
12.	L. M. Farrington, postage.....	1.50
22.	Commercial Envelope & Box Co., envelopes.....	7.57
26.	Mersereau Printery, program for annual meeting 1910..	65.00
26.	O. P. Chase, expressage and car fare.....	.70
26.	R. J. Powers, postage stamps.....	22.27
26.	Postage stamps (received in payment for gummed lists) used in conduct of business in office of Secretary- Treasurer	3.50
Checks in hand		27.00
Balance in City National Bank, Binghamton, N. Y.....		734.19
Balance in Binghamton Savings Bank.....		1,011.66
Balance in Emigrant Industrial Savings Bank.....		1,582.40
Total		\$4,870.80

CHARLES G. WAGNER, *Treasurer*.

April 30, 1910.

On motion the report of the Treasurer was referred to the Auditors.

THE PRESIDENT.—I now call for the report of the Editors of the AMERICAN JOURNAL OF INSANITY.

DR. BRUSH.—*Mr. President and Members of the American Medico-Psychological Association:* At the last annual meeting of the Association it was resolved that commencing with Volume LXVI the JOURNAL should be furnished to members of the Association at the reduced rate of \$3 per annum. A circular letter was therefore at once prepared and mailed to every member of the Association requesting members who were not already

subscribers to send in their names for our subscription list and notifying old subscribers of the reduced rate.

At the same time it was requested that superintendents of institutions send an order for the JOURNAL for the hospital library at the regular rate, \$5 per annum. A gratifying number of new subscribers from the membership of the Association was obtained and a few new subscriptions to the JOURNAL for the libraries of various institutions came in response to the circular. Several of the members of the Association are still strangers to our subscription list, and many institutions in whose libraries or reading rooms the JOURNAL should regularly appear do not receive it.

The financial status of the JOURNAL is a comfortable one. We ended the last year, as shown by the financial report then presented with a balance of \$951.36, but there were liabilities in the shape of bills not presented of \$1120.40, so that there was really a deficit. These bills have been paid, and allowing for liabilities on account of bills for Vol. LXVI we shall have after their payment a balance of \$364.90 to carry over to Vol. LXVII not including \$397.08 subscriptions paid in advance for Vol. LXVII. The receipts from subscriptions and advertisements have been \$435.81 more than last year.

The editors again take the liberty of calling the attention of those who read papers at our meetings to the rule of the Association that papers presented at our meetings are the property of the Association and cannot be published except in the Transactions of the Association or the JOURNAL OF INSANITY except by specific permission of the Council of the Association. The editors are frequently asked by authors of papers for permission to publish their contributions in some medical journal. It should be clearly understood that the editors have no power to grant such permission. It would certainly appear, however, that having received a courteous hearing, having been accorded a place on the program of our Association, authors should give its publications the opportunity to publish their papers before offering them elsewhere. This would seem particularly applicable to contributors of papers, not members of the Association, who have been given a hearing at the meetings of the Association. Readers of papers should also place their papers as soon as read in the hands of the Secretary. It would appear a proper thing to establish a rule that papers not received by the Secretary or Managing Editor of the JOURNAL within twenty days of the close of an annual session should be debarred from appearing in the annual volume of Transactions, and that stenographic reports of remarks made in discussion of papers or otherwise not returned to the Secretary, after being sent out for correction, within fifteen days of the time of mailing by the Secretary would appear as taken by the stenographer or not at all, as in the judgment of the Secretary seemed better.

Delays in receiving manuscript or material sent out for correction cause delays in publication which are vexatious and sometimes expensive.

Respectfully submitted for the Editorial Board,

EDWARD N. BRUSH.

On motion the report was accepted and the vouchers referred to the Auditors.

THE PRESIDENT.—I have the honor of naming the following to constitute the Nominating Committee: Drs. M. L. Perry, of Kansas; Geo. A. Smith, of New York, and A. T. Hobbs, of Ontario.

There will now be a recess of fifteen minutes for the registration of members.

The following members registered and were in attendance during the whole or a part of the meeting:

Abbott, E. Stanley, M. D., Assistant-Physician, McLean Hospital, Waverley, Mass.

Allen, H. D., M. D., Superintendent Allen's Invalid Home, Milledgeville, Ga.

Applegate, C. F., M. D., Superintendent Mt. Pleasant State Hospital, Mt. Pleasant, Iowa.

Arthur, Daniel H., M. D., Superintendent State Homeopathic Hospital, Gowanda, N. Y.

Ashley, Maurice C., M. D., Superintendent Middletown State Homeopathic Hospital, Middletown, N. Y.

Babcock, James W., M. D., Physician and Superintendent State Hospital for the Insane, Columbia, S. C.

Barrett, Albert M., M. D., Medical Director State Psychopathic Hospital at the University of Michigan, Ann Arbor, Michigan.

Becker, W. F., M. D., Trustee Hospital for Insane, Wauwatosa, 604 Goldsmith Building, Milwaukee, Wis.

Beling, Christopher C., M. D., 1098 Broad St., Newark, N. J.

Beutler, W. F., M. D., Superintendent for Chronic Insane, Wauwatosa, Wis.

Biddle, Thomas C., M. D., Superintendent Topeka State Hospital, Topeka, Kan.

Blackburn, I. W., M. D., Pathologist to Government Hospital for Insane, Washington, D. C.

Bradley, Isabel A., M. D., Assistant Physician Friends' Asylum, Frankford, Pa.

Brown, Sanger, M. D., Physician-in-Charge Kenilworth Sanitarium, Kenilworth, Ill.

Brunk, O. C., M. D., Superintendent Eastern State Hospital, Williamsburg, Va.

Brush, Edward N., M. D., Physician-in-Chief and Superintendent Shepard and Enoch Pratt Hospital, Towson, Baltimore, Md.

Bullard, E. L., M. D., Superintendent Chestnut Lodge Sanitarium, Rockville, Md.

Burgess, T. J. W., M. D., Superintendent Protestant Hospital for Insane, Montreal, Can.

Burr, C. B., M. D., Medical Director Oak Grove Hospital, Flint, Mich.
Calder, D. H., M. D., Superintendent State Mental Hospital, Provo, Utah.

Campbell, C. Macfie, M. D., Associate in Clinical Psychiatry, Psychiatric Institute of the New York State Hospitals, Ward's Island, New York, N. Y.

Caples, Byron M., M. D., Superintendent Waukesha Springs Sanitarium, Waukesha, Wis.

Chase, Robert H., M. D., Superintendent Friends' Asylum, Frankford, Philadelphia, Pa.

Chapin, John B., M. D., Physician and Superintendent, Pennsylvania Hospital for the Insane, Philadelphia, Pa.

Clark, J. Clement, M. D., Superintendent Springfield State Hospital, Sykesville, Md.

Coe, Henry Waldo, M. D., Director Crystal Springs, Portland, Oregon.

Coggins, Jesse C., M. D., Medical Director The Laurel Sanitarium, Laurel, Md.

Cook, Robert G., M. D., Physician-in-Charge Brigham Hall, Canandaigua, N. Y.

Coriat, Isador H., M. D., Second Assistant-Physician for Nervous Diseases, Boston City Hospital, 440 Newbury St., Boston, Mass.

Cotton, Henry A., M. D., Medical Director New Jersey State Hospital, Trenton, N. J.

Crittenden, Samuel W., M. D., Assistant-Superintendent Boston State Hospital, Dorchester Center, Boston, Mass.

Crumbacker, W. P., M. D., Superintendent Independence State Hospital, Independence, Iowa.

Dill, Daniel M., M. D., Superintendent Essex County, New Jersey, Hospital for the Insane, Cedar Grove, N. J.

Dold, Wm. Elliott, M. D., Physician-in-Charge River Crest Sanitarium Astoria, L. I., New York, N. Y.

Drewry, Wm. F., M. D., Superintendent Central State Hospital, Petersburg, Va.

Dunton, Wm. Rush, Jr., M. D., Assistant-Physician Sheppard and Enoch Pratt Hospital, Towson, Md.

Elliott, Robert M., M. D., Superintendent Willard State Hospital, Willard, N. Y.

English, Walter M., Superintendent Hospital for Insane, Hamilton, Ontario, Canada.

Evans, Britton D., M. D., Medical Director New Jersey State Hospital, Morris Plains, Greystone Park, N. J.

Eyman, Henry C., M. D., Superintendent Massillon State Hospital, Massillon, Ohio.

Faison, W. W., M. D., Superintendent State Hospital, Goldsboro, N. C.

Flint, Austin, M. D., Consulting Physician Manhattan State Hospital, 118 E. 19th St., New York, N. Y.

Franz, Shepard L., Ph. D., Scientific Director Government Hospital for Insane, Washington, D. C.

Funkhouser, Edgar B., M. D., Assistant-Physician State Hospital, Trenton, N. J.

Garlick, James H., M. D., Assistant-Physician Western State Hospital, Staunton, Va.

Glascock, Alfred, M. D., Assistant-Physician Government Hospital for the Insane, Washington, D. C.

Gorst, Charles, M. D., Superintendent State Hospital for Insane, Mendota, Wis.

Gundry, Richard F., M. D., Medical Director and Proprietor The Richard Gundry Home, Harlem Lodge, Catonsville, Md.

Guth, Morris S., M. D., Superintendent and Physician-in-Chief State Hospital, Warren, Pa.

Hammond, F. S., M. D., Assistant-Physician and Pathologist New Jersey State Hospital, Trenton, N. J.

Hammond, Graeme M., M. D., Professor Mental Diseases, Post-graduate Hospital School and Hospital, 60 W. 55th St., New York, N. Y.

Hancker, Wm. H., M. D., Superintendent Delaware State Hospital, Farnhurst, Del.

Harmon, F. W., M. D., Superintendent Longview Hospital, Cincinnati, Ohio.

Hattie, W. H., M. D., Superintendent Nova Scotia Hospital, Halifax, N. S.

Hawke, W. W., M. D., Chief Resident Physician Philadelphia Hospital for the Insane, Philadelphia, Pa.

Hill, Charles G., M. D., Physician-in-Chief Mt. Hope Retreat, Baltimore, Md.

Hills, Frederick L., M. D., Superintendent State Sanitarium, Rutland, Mass.

Hobbs, A. T., M. D., Superintendent Homewood Sanitarium, Guelph, Ont.

Hoch, August, M. D., Director Psychiatric Institute, New York State Hospitals, Ward's Island, New York, N. Y.

Houston, John A., M. D., Superintendent Northampton State Hospital, Northampton, Mass.

Howard, Eugene H., M. D., Superintendent Rochester State Hospital, Rochester, N. Y.

Hunt, Presley C., M. D., Alienist Corporation Council, 1815 M St., Washington, D. C.

Hurd, Arthur W., M. D., Superintendent Buffalo State Hospital, Buffalo, N. Y.

Hurd, Henry M., M. D., Superintendent The Johns Hopkins Hospital, Baltimore, Md.

Hutchings, Richard H., M. D., Superintendent St. Lawrence State Hospital, Ogdensburg, N. Y.

Inch, G. F., M. D., First Assistant-Physician State Hospital, Kalamazoo, Mich.

Jones, L. M., M. D., Superintendent Georgia State Sanitarium, Mill-edgeville, Ga.

Kieb, Raymond F. C., M. D., Assistant-Physician Matteawan State Hospital, Fishkill-on-Hudson, N. Y.

Kindred, J. Joseph, M. D., Proprietor River Crest Sanitarium, Astoria, L. I., New York, N. Y.

King, Geo. W., M. D., Superintendent and Medical Director Hudson County Hospital, Secaucus, N. J.

Kinney, C. Spencer, M. D., Proprietor Easton Sanitarium, Easton, Pa.

Kirby, George H., M. D., Director Clinical Psychiatry Manhattan State Hospital, Ward's Island, New York, N. Y.

Lamb, Robert B., M. D., Superintendent Matteawan State Hospital, Fishkill-on-Hudson, N. Y.

Lane, Edward B., M. D., Resident Physician Adams Nervine Asylum, 419 Boylston St., Boston, Mass.

Laughlin, C. E., Superintendent Southern Indiana Hospital for Insane, Evansville, Ind.

Lewis, J. M., M. D., 436 Rose Building, Cleveland, Ohio.

Mabon, William, M. D., Superintendent and Medical Director Manhattan State Hospital, Ward's Island, New York, N. Y.

MacDonald, Carlos F., M. D., Physician-in-Charge Dr. MacDonald's Home, 15 E. 48th St., New York, N. Y.

McC Campbell, John, M. D., Superintendent State Hospital, Morganton, N. C.

Meredith, H. B., M. D., Physician and Superintendent State Hospital for the Insane, Danville, Pa.

Meyer, Adolf, M. D., Professor of Psychiatry, Johns Hopkins University, Baltimore, Md.

Miller, Henry W., M. D., Clinical Director Government Hospital for Insane, Washington, D. C.

Munson, J. F., M. D., Resident Pathologist Craig Colony for Epileptics, Sonyea, N. Y.

North, Charles H., M. D., Superintendent Dannemora State Hospital, Dannemora, N. Y.

Noyes, William, M. D., 11 St. John St., Jamaica Plain, Mass.

O'Malley, Mary, M. D., Senior Assistant-Physician Government Hospital for Insane, Washington, D. C.

Orth, H. L., M. D., Superintendent and Physician Pennsylvania State Lunatic Hospital, Harrisburg, Pa.

Page, Charles W., M. D., Physician and Superintendent Danvers State Hospital, Hathorne, Mass.

Palmer, H. L., M. D., Superintendent Utica State Hospital, Utica, N. Y.

Perry, Middleton L., M. D., Superintendent Kansas State Hospital for Epileptics, Parsons, Kan.

Pilgrim, Charles W., M.D., Superintendent Hudson River State Hospital, Poughkeepsie, N. Y.

Priddy, A. S., M.D., Executive Officer Virginia State Epileptic Colony, Lynchburg, Va.

Prout, Thomas P., M.D., Fair Oaks Sanatorium, Summit, N. J.

Punton, John, M.D., Superintendent The Punton Sanitarium, Kansas City, Mo.

Richardson, Wm. W., M.D., Chief Physician, Department for Men, State Hospital for Insane, Norristown, Pa.

Ripley, Horace G., M.D., First Assistant-Physician Taunton State Hospital, Taunton, Mass.

Robins, Wm. L., M.D., 1700 13th St. N. W., Washington, D. C.

Robinson, W. J., M.D., Superintendent Hospital for Insane, London, Ont.

Rosanoff, A. J., M.D., Second Assistant-Physician, Kings Park State Hospital, Kings Park, N. Y.

Ross, Donald L., M.D., Assistant-Physician Kings Park State Hospital, Kings Park, N. Y.

Russell, Wm. L., M.D., Superintendent Long Island State Hospital, Brooklyn, N. Y.

Sandy, William C., M.D., Assistant-Physician State Hospital, Trenton, N. J.

Scribner, E. V., M.D., Superintendent Worcester State Asylum Worcester, Mass.

Searcy, James T., M.D., Superintendent Alabama Insane Hospitals, Tuscaloosa, Ala.

Searl, Wm. A., M.D., Medical Director Fair Oaks Villa, Cuyahoga Falls, Ohio.

Shanahan, William T., M.D., Superintendent Craig Colony for Epileptics, Sonyea, N. Y.

Simpson, John C., M.D., 1421 Massachusetts Ave., Washington, D. C.

Smith, Geo. A., M.D., Superintendent and Medical Director Central Islip State Hospital, Central Islip, N. Y.

Smith, Samuel E., M.D., Superintendent Eastern Indiana Hospital for the Insane, "Easthaven," Richmond, Ind.

Southard, Elmer E., M.D., Pathologist to the Board of Insanity, 36 State House, Boston, Mass.

Taylor, Isaac M., M.D., Superintendent and Resident Physician Broad-oaks Sanatorium, Morganton, N. C.

Terflinger, Fred. W., M.D., Superintendent Northern Hospital for Insane, "Longcliff," Logansport, Ind.

Tuttle, George T., M.D., Superintendent McLean Hospital, Waverley, Mass.

Uhls, L. L., M.D., Superintendent Osawatomie State Hospital, Osawatomie, Kansas.

Upson, Henry S., M.D., Visiting Neurologist Lakeside Hospital, 515 New England Building, Cleveland, Ohio.

Wade, J. Percy, M. D., Superintendent Maryland Hospital Catonsville, Md.

Wagner, Charles G., M. D., Superintendent Binghamton State Hospital, Binghamton, N. Y.

Walker, Lewis M., M. D., First Assistant-Physician Medfield State Asylum, Medfield, Mass.

White, Grace E., M. D., Wood Lea Sanitarium, Ardmore, Pa.

White, M. J., M. D., Superintendent Milwaukee Hospital for Insane, Wauwatosa, Wis.

White, Wm. A., M. D., Superintendent Government Hospital for the Insane, Washington, D. C.

White, W. Rushmore, M. D., Superintendent Patapsco Manor Sanitarium, Ellicott City, Md.

Williams, Tom A., M. D., Neurologist to Epiphany Free Dispensary, 1758 K St., Washington, D. C.

Work, Hubert, M. D., Superintendent Woodcroft Hospital, Pueblo, Col.

The following visitors and guests of the Association registered their names with the Secretary:

Anderson, Miss Olivia, Rockville, Md.

Applegate, Mrs. C. F., Mt. Pleasant, Iowa.

Arthur, Mrs. D. H., Gowanda, N. Y.

Atherton, Horace H., East Saugus, Mass.

Atherton, Mrs. H. H., East Saugus, Mass.

Ashley, Mrs. M. C., Middletown, N. Y.

Beutler, Mrs. W. F. Wauwatosa, Wis.

Bullard, Mrs. E. L., Rockville, Md.

Busse, E. P., M. D., Superintendent Southeastern Indiana Hospital for the Insane, Madison, Ind.

Caples, Mrs. B. M., Waukesha, Wis.

Conant, Mary C., M. D., Pathologist Warren State Hospital, Warren, Pa.

Dresslar, Fletcher Bascom, University, Alabama.

Drewry, Mrs. W. F., Petersburg, Va.

English, Mrs. E. M., Hamilton, Ontario, Canada.

Field, H. P., Northampton, Mass.

Field, J. W., M. D., Assistant-Physician Western State Hospital, Staunton, Va.

Fordyce, O. O., M. D., Superintendent Athens State Hospital, Athens, Ohio.

Gorst, Mrs. Charles, Mendota, Wis.

Gundry, Miss Grace, Catonsville, Md.

Guth, Mrs. Morris S., Warren, Pa.

Hattie, Mrs. W. H., Halifax, N. S.

Kindred, Mrs. J. Joseph, Astoria, L. I., New York, N. Y.

Laughlin, Mrs. C. E., Evansville, Ind.

Laughlin, Miss Genevieve, Evansville, Ind.

MacDonald, Miss Elizabeth H., Central Valley, N. Y.

Reid, Eva Charlotte, M. D., Junior Assistant-Physician Government Hospital for the Insane, Washington, D. C.

Richards, Robert L., M. D., Captain Medical Corps United States Army, Washington, D. C.

Riggs, George H., M. D., Superintendent Riggs Cottage, Ijamsville, Md.
Scribner, Mrs. E. V., Worcester, Mass.

Spencer, Elizabeth C., M. D., Resident Physician Department for Women, State Hospital, Norristown, Pa.

Williams, H. L., Trustee Northampton State Hospital, Northampton, Mass.

THE PRESIDENT.—The meeting will come to order. In accordance with our custom in recent years the next in order is the memorial notices of members who have died since our last meeting. What is the pleasure of the Association?

DR. HANCKER.—I move that the memorial notices of Patrick L. Murphy, M. D., B. D. Eastman, M. D., William C. Krauss, M. D., W. A. Gordon, M. D., Maurice J. Stack, M. D., Oliver M. Dewing, M. D., John A. Beauchamp, M. D., be read by title and printed in the TRANSACTIONS.

Which motion was duly seconded and carried.

THE PRESIDENT.—I would ask Dr. Pilgrim to take the Chair at this time.

DR. PILGRIM (Presiding).—The next business in order is the address by the President of the Association, Dr. Drewry.

The President of the Association, Dr. William Francis Drewry, read his address, "The Scope of the Activities of the Alienist," which was greeted with applause.

DR. PILGRIM.—It is not permissible to discuss the President's address, but I am sure a vote of thanks is at least due him.

DR. BRUSH.—I am very happy to move that a vote of thanks be extended to the President of the Association, and that the recommendations contained in his address be referred to the Council.

This motion unanimously prevailed.

THE PRESIDENT.—I wish to announce that the meeting of the Congress this afternoon will be called to order at two-thirty o'clock in the Convention Hall of the Arlington Hotel and that the subject to be considered is "Artificial Immunization." This evening at eight-thirty o'clock, in the same hall, Dr. Edward L. Trudeau, President of the Congress, will deliver his address, "The Value of Optimism in Medicine."

On motion the meeting adjourned.

WEDNESDAY, MAY 4, 1910, 10 A. M.

THE PRESIDENT.—The Council has not met since our session yesterday, therefore there is no report, so the first order of business this morning is the election of members, active and associate. The ballots containing the names of applicants that have already been approved by the Council will now be distributed. Drs. I. M. Taylor and F. W. Harmon will please distribute the ballots and act as tellers.

DR. WHITE.—I move that a ballot be taken on the candidates for active and associate membership at the same time.

Which motion was duly seconded and carried.

DR. H. M. HURD.—The ballot I have contains the name of "King, M. D." Now I do not care to vote for a man whose name I do not know.

DR. PILGRIM.—I would like to say that last year Dr. Stone said that several changes had been made in the superintendents of the different institutions and that he would like to present the names of those representing California, and he assured the Council that Dr. King was all right.

THE PRESIDENT.—The gentlemen whose names appear on the ballot have received all the votes cast, and it gives me pleasure to announce their election to membership in the Association.

THE PRESIDENT.—Any unfinished business will now be considered. The Chair will call upon Dr. Wm. A. White to present the report of the Committee on Legislation and Emigration.

DR. WM. A. WHITE.—The Committee on Legislation and Emigration was appointed for the purpose of doing what it could to co-operate with the special committee for the furtherance of the passage of a bill that was pending before the House to deport aliens who had committed crimes in their native countries. After the first year there was a committee appointed by Congress to investigate the same thing. We were continued and I have been in constant communication with Mr. Bennett, who is the father of the House bill. I have the pleasure to report that two bills were introduced by Mr. Bennett, one for the deportation of criminal aliens and the other for the regulation of the white slave traffic. The former passed the House and then passed the Senate with some amendments. The other passed the House and the Senate and the bill was signed by the President on March 26, 1910. That bill contains substantially all the restriction on criminal aliens that was approved by this Association. I transmit herewith a copy of the bill for introduction into the records.

PUBLIC—NO. 107. H. R. 15816.

AN ACT TO AMEND AN ACT ENTITLED "AN ACT TO REGULATE THE IMMIGRATION OF ALIENS INTO THE UNITED STATES," APPROVED FEBRUARY TWENTIETH, NINETEEN HUNDRED AND SEVEN.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section two of the Act entitled "An Act to regulate the immigration of aliens into the United States," approved February twentieth, nineteen hundred and seven, is hereby amended so as to read as follows:

"SECTION 2. That the following classes of aliens shall be excluded from admission into the United States: All idiots, imbeciles, feeble-minded persons, epileptics, insane persons, and persons who have been insane within five years previous; persons who have had two or more attacks of insanity at any time previously; paupers; persons likely to become a public charge; professional beggars; persons afflicted with tuberculosis or with a loathsome or dangerous contagious disease; persons not comprehended within any of the foregoing excluded classes who are found to be and are certified by the examining surgeon as being mentally or physically defective, such mental or physical defect being of a nature which may affect the ability of such alien to earn a living; persons who have been convicted of or admit having committed a felony or other crime or misdemeanor involving moral turpitude; polygamists, or persons who admit their belief in the practice of polygamy; anarchists or persons who believe in or advocate the overthrow by force or violence of the government of the United States, or of all government, or of all forms of law, or the assassination of public officials; prostitutes, or women or girls coming into the United States for the purpose of prostitution or for any other immoral purpose; persons who are supported by or receive in whole or in part the proceeds of prostitution; persons who procure or attempt to bring in prostitutes or women or girls for the purpose of prostitution or for any other immoral purpose; persons hereinafter called contract laborers who have been induced or solicited to migrate to this country by offers or promises of employment or in consequence of agreements, oral, written or printed, expressed or implied, to perform labor in this country of any kind, skilled or unskilled; those who have been, within one year from the date of application for admission to the United States, deported as having been induced or solicited to migrate as above described; any person whose ticket or passage is paid for with the money of another, or who is assisted by others to come, unless it is affirmatively and satisfactorily shown that such person does not belong to one of the foregoing excluded classes and that said ticket or passage was not paid for by any corporation, association, society, municipality, or foreign government, either directly or indirectly; all children under sixteen years of age unaccompanied by one or both of their parents, at the discretion of the Secretary of Commerce and Labor or under such regulations as he may from time to time prescribe: *Provided*, That nothing in this Act shall exclude, if otherwise admissible,

persons convicted of an offense purely political, not involving moral turpitude: *Provided further*, That the provisions of this section relating to the payments for tickets or passage by any corporation, association, society, municipality, or foreign government shall not apply to the tickets or passage of aliens in immediate and continuous transit through the United States to foreign contiguous territory: *And provided further*, That skilled labor may be imported if labor of like kind unemployed cannot be found in this country: *And provided further*, That the provisions of this law applicable to contract labor shall not be held to exclude professional actors, artists, lecturers, singers, ministers of any religious denomination, professors for colleges or seminaries, persons belonging to any recognized learned profession, or persons employed strictly as personal or domestic servants."

SEC. 2. That section three of an Act entitled "An Act to regulate the immigration of aliens into the United States," approved February twentieth, nineteen hundred and seven, is hereby amended so as to read as follows:

"SEC. 3. That the importation into the United States of any alien for the purpose of prostitution or for any other immoral purpose is hereby forbidden; and whoever shall, directly or indirectly, import, or attempt to import, into the United States, any alien for the purpose of prostitution or for any other immoral purpose, or whoever shall hold or attempt to hold any alien for any such purpose in pursuance of such illegal importation, or whoever shall keep, maintain, control, support, employ, or harbor in any house or other place, for the purpose of prostitution or for any other immoral purpose, in pursuance of such illegal importation, any alien, shall, in every such case, be deemed guilty of a felony, and on conviction thereof be imprisoned not more than ten years and pay a fine of not more than five thousand dollars. Jurisdiction for the trial and punishment of the felonies hereinbefore set forth shall be in any district to or into which said alien is brought in pursuance of said importation by the person or persons accused, or in any district in which a violation of any of the foregoing provisions of this section occur. Any alien who shall be found an inmate of, or connected with the management of, a house of prostitution or practicing prostitution after such alien shall have entered the United States; or who shall receive, share in, or derive benefit from any part of the earnings of any prostitute; or who is employed by, in, or in connection with any house of prostitution or music or dance hall or other place of amusement or resort habitually frequented by prostitutes, or where prostitutes gather; or who in any way assists, protects, or promises to protect from arrest any prostitute, shall be deemed to be unlawfully within the United States and shall be deported in the manner provided by sections twenty and twenty-one of this Act. That any alien who shall, after he has been debarred or deported in pursuance of the provisions of this section, attempt thereafter to return to or to enter the United States shall be deemed guilty of a misdemeanor, and shall be imprisoned for not more than two years. Any alien who shall

be convicted under any of the provisions of this section shall, at the expiration of his sentence, be taken into custody and returned to the country whence he came, or of which he is a subject or a citizen, in the manner provided in sections twenty and twenty-one of this Act. In all prosecutions under this section the testimony of a husband or wife shall be admissible and competent evidence against a wife or husband."

Approved, March 26, 1910.

DR. H. M. HURD.—I move the report of the committee be accepted and the committee discharged.

Which motion was duly seconded and carried.

THE PRESIDENT.—The report of the Committee on Expert Testimony, Dr. Stedman.

Dr. Stedman, Chairman of the committee, presented the report, which has been printed in the *AMERICAN JOURNAL OF INSANITY*, Vol. LXVII, pp. 177-186, July, 1910.

THE PRESIDENT.—Gentlemen you have heard the report of the Committee on Expert Testimony. What is your pleasure?

DR. HILL.—I move that we accept the report with thanks to the committee for their labors.

DR. PILGRIM.—In view of the great importance of the report and of the general interest in the subject of expert testimony I would like to suggest that the committee be instructed to make this report public not only through the medical press but through the public press. It should have wide dissemination as soon as possible.

DR. BURR.—It is necessary to adopt it and then promulgate it as the expression of this society.

DR. EVANS.—The gentlemen on this testimony committee have gone into this subject thoroughly and have treated it exhaustively but I venture to say here that there are not ten men back of these front seats who can repeat to you with definiteness any four numbers or parts of the resolutions. I am not taking exception to the resolutions. I have not time to discuss them. When you adopt or commit yourselves to such a set of resolutions, so exhaustive as these, it should be done after due deliberation. I heartily approve of Dr. Hill's motion to accept them, but to adopt them and make them the conviction and sense of this Association, I believe not to be prudent. I, for one, do not fully know what I am voting on. I do have in mind the principal features of about three of the resolutions, the rest of them I do not clearly understand. I have no doubt they are all excellent and I am sure from the mental make-up of the committee that the resolutions are worthy of our consideration and discussion, but a

hasty adoption of them by such a large organization as this, and the unqualified indorsement of such important matters to which the society has not had proper and deliberate access, thus committing each individual member, I think would be unwise action. I think the safer course for us to take is to accept the resolutions and extend the thanks of the society to the members of the committee who have worked so well.

DR. MABON.—It seems to me that in accepting the report we are not taking action. The presentation of the report seems to me to call for action. We should take up the work done section by section, if necessary, and then adopt or reject them.

DR. CORIAT.—I think so exhaustive and so important a report should not be hastily adopted. I believe the society should have more time to weigh all the facts. I think that this exhaustive report should be printed and a copy sent to each member, and at some time next year at the next meeting, the members should come prepared to discuss the report on a certain day set apart for the purpose and the stating of the society's attitude toward the subject of expert testimony.

DR. HILL.—The report, the resolutions, are so thorough and exhaustive that we want time to consider them before adopting them absolutely. The report should be printed and laid before us. We have from now until our next meeting to consider it. We would have to set apart a certain day to discuss it. I therefore accept the suggestion as a substitute for my motion.

THE PRESIDENT.—Do you offer your remarks as a motion, Dr. Coriat?

DR. CORIAT.—I will.

THE PRESIDENT.—Dr. Stedman, have you anything to offer?

DR. STEDMAN.—Nothing except that we have worked very hard and a long time and had meetings of the committee and this is the result of our labors and I leave to the Association to decide what steps to take on the report.

THE PRESIDENT.—The motion is to accept the report, that it be printed and distributed to the members and action taken at the next annual meeting.

DR. SOUTHARD.—Do I understand that the committee is maintained until next year?

THE PRESIDENT.—I understand so.

DR. WHITE.—I think that this report ought to be printed in the JOURNAL OF INSANITY in the same manner as other papers and then a reprint can be sent to every member of the Association and placed in the proceedings of the Association together with a statement of the whole case and that it is going to be open to discussion at the next meeting.

DR. STEDMAN.—I rise to a question of whether the committee should not be discharged and the matter taken out of our hands.

DR. MABON.—It seems to me that inasmuch as the committee has made its report there is no necessity for the continuation of the committee and in my judgment they have done it well and it seems to me the facts are before the Association.

DR. EVANS.—I am heartily in accord with Dr. Mabon's views. The committee has performed its duties. If further discussion will develop anything new the committee, if discharged, will be here with all the rights that the other members of the Association possess, and if they make new acquisitions having a direct bearing on the subject they can report them.

DR. MABON.—I move that the original motion be amended to include the discharge of the committee.

THE PRESIDENT.—The motion before the house is that the report be accepted with the amendment that the committee be discharged.

It was voted that the committee be discharged.

It was voted that the report of the committee on expert testimony be accepted, that it be printed and distributed to the members, and action taken at the next annual meeting.

THE PRESIDENT.—The next in order is the report of the Nominating Committee, Dr. Perry.

DR. PERRY.—Your Nominating Committee reports as follows:

For President, Charles W. Pilgrim, M. D., Poughkeepsie, N. Y.

For Vice-President, Hubert Work, M. D., Pueblo, Col.

For Secretary-Treasurer, Charles G. Wagner, M. D., Binghamton, N. Y.

For Councillors, Robert B. Lamb, M. D. Fishkill Landing, N. Y.; W. W. Richardson, M. D., Norristown, Pa.; Charles K. Clarke, M. D., Toronto, Ont.; W. P. Crumbacker, M. D., Independence, Iowa.

For Auditor, Sanger Brown, M. D., Chicago, Ill.

DR. WHITE.—I move the adoption of the report.

Which motion was duly seconded and carried.

On motion, duly seconded, the Secretary was instructed to cast a ballot for the gentlemen named in the report as the officers of the Association for the ensuing year.

The ballot was cast and the President declared the gentlemen duly elected.

THE PRESIDENT.—The next in order is the report of the Auditors.

DR. KING.—I beg to report that I have examined the accounts of the Treasurer and have seen the books, vouchers, bank books, etc., and found everything correct. The same is true of the report submitted by the Editors of the JOURNAL OF INSANITY.

DR. EVANS.—I move that the report of the Auditor be accepted.

Which motion was duly seconded and carried.

THE PRESIDENT.—I take pleasure in appointing the Committee on Resolutions as follows: Dr. S. E. Smith, Richmond, Ind.; Dr. W. H. Hattie, Halifax, N. S.; Dr. J. J. Kindred, Astoria, N. Y.; Dr. H. L. Orth, Harrisburg, Pa.; Dr. J. W. Babcock, Columbia, S. C.

THE PRESIDENT.—Gentlemen, the Program Committee, Dr. A. W. Hurd, Chairman, did most excellent work and deserves and doubtless has the hearty appreciation of the Association. It is hoped that the members of the Association will show their appreciation by attending the sessions and otherwise co-operating in the prompt dispatch of whatever business we may have before us. The first paper on the program is by Dr. Southard, who has some suggestion to offer in regard to the presentation of the papers at this time.

DR. SOUTHARD.—It is asked that the papers on the program for the morning be postponed until this afternoon, the various writers of the other papers wish this translocation. I have Dr. Fitzgerald's paper and can read that instead of my own at this time.

DR. EVANS.—To change the program without the consent or the knowledge of those persons on the program for a particular time, would, it seems, be liable to disappoint some. And another point I would like to make is the advisability of suggesting to the writers of papers that they will not be read in their absence. I think that has been disposed of by this Association as not being in order and that it would not only be bad form, but would shut out those who have made it a point to be present with their papers ready in accordance with the printed program.

THE PRESIDENT.—What is the pleasure of the Association in regard to the proposed change in the program respecting the order of presenting papers?

DR. MABON.—Dr. Ferris has presented a very valuable paper which he asked me to read for him. It is one that all of the members of the society are interested in and it would appear better read than printed.

DR. MACDONALD.—I move that the President be authorized to change the program as prepared by the Committee as may seem best to fit the convenience of the men.

Which motion was duly seconded and carried.

DR. PILGRIM.—As Dr. Fitzgerald was requested to prepare his paper and undoubtedly has done a good deal of work upon it I think it should be read, and I also make the same motion in regard to Dr. Ferris' paper.

DR. EVANS.—I have no doubt these papers are all right; there is nothing about the papers that I object to. But if you authorize the President, by motion, to select this or that paper to be read it will indicate something in the way of favoritism.

DR. H. M. HURD.—I move that we take up the papers of Dr. Fitzgerald and Dr. Ferris in their absence, and that Dr. Fitzgerald's paper be now read.

Which motion was duly seconded and carried.

The following papers were read:

"Immunity in Relation to Psychiatry," by John G. Fitzgerald, M. D., Toronto, Ont., was read by Dr. E. E. Southard, and on motion of Dr. Hill it was voted that the Secretary express the thanks of the Association to Dr. Fitzgerald for his valuable contribution.

"The History of the American Medico-Psychological Association," by Henry M. Hurd, M. D. (by title), and the resolutions accompanying the article were referred to the Council.

"Alcoholic Amnesia," by Charles W. Pilgrim, M. D., Poughkeepsie, N. Y. Discussed by Drs. Coriat, Hurd, and MacDonald.

"Possible Preventive Measures in Insanity," by Albert Warren Ferris, M. D., Albany, N. Y., was read by Dr. William Mabon, New York.

THE PRESIDENT.—I will appoint as Delegates to the International Prison Congress: Dr. Robert B. Lamb, of New York; Dr. Charles G. Hill, of Maryland; Dr. O. R. Long, of Michigan; Dr. Charles A. Drew, of Massachusetts; Dr. William A. White, of District of Columbia; Dr. H. C. Eymann, of Ohio; and Dr. Geo. F. Edenharter, of Indiana.

THE PRESIDENT.—I will now declare a recess until two o'clock this afternoon.

AFTERNOON SESSION.

THE PRESIDENT.—The Association will please come to order.

The following papers were read:

"The Ethical Aspects of Expert Testimony in Relation to the Plea of Insanity as a Defense to an Indictment for Crime," by

Carlos F. MacDonald, New York, N. Y. Discussed by Dr. Evans, Dr. White, Dr. Gorst, Dr. Beebe, and Dr. MacDonald.

"Brain Findings in Dementia Præcox," by E. E. Southard, M. D., of Boston, Mass.

"A Discussion of the Mental Make-up in the Dementia Præcox Group," by August Hoch, New York, N. Y.

"The Intermittent Forms of Dementia Præcox," by William Rush Dunton, Jr., of Towson, Md.

The papers of Drs. Southard, Hoch, and Dunton were discussed by Dr. Cotton, Dr. Coriat, Dr. Williams, Dr. Hoch, and Dr. Southard.

"Syphilitic Disorders of the Brain. A group Illustrating the Meningeal Forms," Lantern Demonstration, by Charles B. Dunlap, M. D., of New York, N. Y.

Adjournment.

THURSDAY, MAY 5, 1910, 10 A. M.

THE PRESIDENT.—The Association will please come to order. The report of the Council is the first order of business.

REPORT OF THE COUNCIL FOR MAY 5, 1910.

The Council recommends the transfer of the following named associate member to the active class: Benjamin R. McAllaster, M. D., Cherokee, Iowa.

The Council recommends the election of the following named physicians to the associate class: George K. Butterfield, M. D., Taunton, Mass.; George P. Ard, M. D., Spring City, Pa.

The Council has received the following applications for active membership. In accordance with the constitution, final consideration of these will be deferred until next year: Edward P. Busse, M. D., Madison, Ind.; O. O. Fordyce, M. D., Athens, Ohio; Luther M. Halsey, M. D., Williams-town, N. J.; John H. W. Rhein, M. D., Philadelphia, Pa.; G. Wiltse Robinson, M. D., Kansas City, Mo.

The Council has authorized Dr. Albert Warren Ferris and Dr. Carlos F. MacDonald to publish their papers read at this meeting elsewhere than in the AMERICAN JOURNAL OF INSANITY, if they so desire.

The Council makes the following recommendation:

That the incoming President be authorized to appoint a Program Committee for the next annual meeting, and also a Committee of Arrangements.

Respectfully submitted,

CHARLES G. WAGNER, *Secretary.*

On motion, duly seconded, the report of the Council was accepted and adopted.

The following papers were read:

"Insanity Among Adolescent Criminals," by Charles H. North, M. D., Dannemora, N. Y.

"Methods of Dealing with the Criminal Insane. Defects in Present Methods and Suggested Remedies," by Austin Flint, M. D., New York, N. Y.

The papers of Dr. North and Dr. Flint were discussed by Drs. Lamb, Brush, MacDonald, North, and Flint.

"Cardio-Genetic Psychosis," Report of a Case with Autopsy, by Henry A. Cotton, M. D., and Frederick S. Hammond, M. D., Trenton, N. J.

"Degenerations of Intercellular Neuro-fibrils with Miliary Gliosis; a Characteristic Pathological Process in Certain Psychoses of the Senile Period," by Albert M. Barrett, M. D., Ann Arbor, Mich.

"A Clinical-Anatomical Classification of the Senile and Arterio-Sclerotic Disorders," Lantern Demonstration, by Charles I. Lambert, M. D., New York, N. Y.

THE PRESIDENT.—I now declare a recess until two o'clock this afternoon at the Government Hospital for the Insane.

AFTERNOON SESSION.

THE PRESIDENT.—The Association will please come to order.

The following papers were read:

"Military Psychiatry," by Robert L. Richards, M. D., U. S. A., Washington, D. C. Discussion by Drs. Wm. A. White, H. M. Hurd, Brush, and Richards.

"Juvenile Paresis," Clinical and Anatomical Report of a Case, by Harry W. Miller, M. D., and Nicholas Achucarro, M. D., Washington, D. C. Discussion by Dr. Sydney Kuh, of Chicago, Ill.

"Prevalence and Psychology of Pellagra," by J. W. Babcock, M. D., Columbia, S. C.

"A Report of Two Cases of Pellagra," by M. L. Perry, M. D., Parsons, Kansas.

The papers of Drs. Babcock and Perry were discussed by Drs. Searcy, Williams, Hill and Babcock.

On motion of Dr. Babcock, seconded by Dr. Hill, it was voted that a special committee, with Dr. Wm. A. White, of Washington, D. C., as Chairman, be appointed by the President of the Association to arrange for a symposium on Pellagra for the next meeting of the Association.

THE PRESIDENT.—The Council reports that it has received the application of R. F. S. Kieb, M. D., Matteawan, N. Y., for associate membership, and the application of Benjamin R. Logie, M. D., Washington, D. C., for transfer from associate to active membership. These applications will be considered to-morrow together with those presented by the Council at this morning's session.

THE PRESIDENT.—I am sure that I express the sentiments of the Association in extending to Dr. White and his associates in this hospital our grateful thanks for this very cordial reception this afternoon. I understand that this is the first meeting that has been held in this hall by any organization. We appreciate the courtesies shown us.

DR. PALMER.—I move that the Association extend to Dr. Wm. A. White, Superintendent of the Government Hospital for the Insane, a rising vote of thanks for his courtesy during the week.

Which motion was duly seconded and carried.

THE PRESIDENT.—We will now adjourn to meet at the New Willard Hotel at eight-thirty this evening.

EVENING SESSION.

THE PRESIDENT.—It has been the custom, ladies and gentlemen, for our Association to select each year some distinguished scientist to make a public address. The Committee of Arrangements, whose duty it is to select such a speaker, has chosen well and wisely this year. I shall now present Dr. James T. Searcy, of Alabama, one of our most distinguished members, who will introduce to you the orator and honored guest of this occasion.

DR. SEARCY.—*Ladies and gentlemen:* I take great pleasure in confirming the notice that appears in our printed program, that the Annual Address at this meeting of the American Medico-Psychological Association will be made by Dr. F. B. Dresslar, of Alabama.

I am glad that the selection of a man to make the address has been from outside the medical profession, and from our State.

Dr. Dresslar stands high in Alabama. He is highly appreciated by all. He is a native of Indiana; is a graduate of the University of that State and of Clark University in Massachusetts, which latter means he has been trained under Dr. J. Stanley Hall in psychology. He came to Alabama from the University of California, where he was Professor of Education, and is now Professor of Psychology and Education in the University of Alabama.

He has written a good deal of a scientific character that has appeared in public print and journals. I do not suppose I am "telling a tale out of school," when I say that he is now in the employ of the Department of the Interior, with the Commissioner of Education, preparing a work on School Hygiene, which, when it appears in two volumes, will be a textbook of value, on Hygienic Construction and Management, in the libraries of all our institutions.

I have read with very much interest a work Dr. Dresslar has published on Superstitions. He has consented this evening to give us some "Suggestions on the Psychology of Superstition." I have no doubt we shall all be interested, instructed, and entertained, as we hear him.

I present to you Dr. Dresslar.

DR. DRESSLAR.—*Mr. Chairman, ladies and gentlemen:* I feel very much honored indeed to be asked to appear before this very select, very critical audience, but I feel quite abashed after the introduction by Dr. Searcy. However, without any further remarks I wish to present to you as briefly as I can what few suggestions I have for you.

Dr. Dresslar then delivered his address "Some Suggestions on the Psychology of Superstition," which was greeted with applause.

DR. HILL.—I move you, Mr. President, that a vote of thanks be extended to Dr. Dresslar for the able and instructive address he has given us this evening.

Which motion was duly seconded and carried.

THE PRESIDENT.—On behalf of the National Association for the Care of Epileptics and the Study of Epilepsy, I extend to the members of this Association a most cordial invitation to attend the annual meeting to be held in Baltimore, May 7.

I am requested to state that there will be a meeting of the Council in this room immediately following adjournment.

Adjournment.

FRIDAY, MAY 6, 1910, 10 A. M.

THE PRESIDENT.—The Association will please come to order. The report of the Council.

REPORT OF THE COUNCIL FOR MAY 6, 1910.

The Council recommends:

That the next annual meeting of the Association be held in Denver, Col.

That the date of the next annual meeting be designated later by the Committee of Arrangements.

That the President be authorized to appoint the committees "On Legislation, New Laws, System of Care and Supervision, etc., in the several States" and "On the Status of Medical and Scientific Work, etc., in the hospitals of the several States and Provinces" as mentioned in his address.

That the sum of \$250 per annum be set aside annually by the Treasurer of the Association to defray the cost of preparing for the press and printing a history of the institutional care of the dependent insane in the United States and Canada as recommended by Dr. Henry M. Hurd.

Respectfully submitted,

CHARLES G. WAGNER, *Secretary*.

DR. BRUSH.—I move that so much of the report of the Council as refers to the meeting in Denver be rejected.

Which motion was duly seconded and carried.

DR. BRUSH.—I move that the Association meet at Niagara Falls, at the Clifton House, in 1911.

DR. BIDDLE.—This Association is a National Association and we of the middle west have been willingly coming to the Atlantic Coast to attend these meetings and it seems to me but fair that the meetings should be distributed geographically, and it seems proper that the next meeting should be held at Denver. It is a delightful place to meet, accommodations are first class and it appeals to me in the way of fairness. It would be very proper to have this meeting in Denver. Conditions in the middle west have changed very materially in recent years.

DR. HOWARD.—I would ask the Council to make a little more clear their reason for the suggestion of Denver.

DR. BRUSH.—A member of the Council informs me that he went out among the members of the Association and asked if they would like to meet at the Clifton House, Niagara Falls, and he found many in favor of it. Denver is not a good place for our meeting.

THE PRESIDENT.—The question is on the motion of Dr. Brush, which has been seconded, that the Association meet at Niagara Falls, at the Clifton House, in 1911.

A rising vote was taken on the motion, the Secretary counting.

THE PRESIDENT.—The Secretary informs me that the vote on the motion is twelve in favor and twenty-six against holding. The motion is lost.

DR. BRUSH.—I move that we accept the report of the Council and adopt it, and that the meeting of this Association in 1911 be held in Denver, Col., during the month of June.

Which motion was duly seconded and unanimously prevailed.

THE PRESIDENT.—Next in order is the election of new members and the transfer from associate membership to active membership, as recommended in the report of the Council yesterday.

DR. HOWARD.—I move that the Secretary be directed to cast the ballot of the Association for the transfer from associate to active membership of Benjamin R. McAllaster, M. D., Cherokee, Iowa, and Benjamin R. Logie, M. D., Washington, D. C., and for the election to associate membership of George K. Butterfield, M. D., Taunton, Mass.; George P. Ard, M. D., Spring City, Pa., and Raymond F. S. Kieb, M. D., Matteawan, N. Y.

Which motion was duly seconded and carried.

THE PRESIDENT.—The ballot has been cast and the members are duly elected.

THE PRESIDENT.—I will appoint the following committees:

On Legislation, New Laws, System of Care and Supervision, etc., in the several States: Dr. E. N. Brush, Maryland; Dr. R. H. Hutchings, New York; Dr. C. P. Bancroft, New Hampshire; Dr. J. T. Searcy, Alabama, and Dr. John Punton, Kansas.

On the Status of Medical and Scientific Work, etc., in the hospitals of the several States and Provinces: Dr. Adolf Meyer, New York; Dr. Richard Dewey, Wisconsin; Dr. B. D. Evans, New Jersey; Dr. E. V. Scribner, Massachusetts; Dr. L. M. Jones, Georgia, and Dr. J. V. Anglin, New Brunswick.

DR. SEARCY.—I have been asked to present this resolution:

WHEREAS, The preservation of health is one of the first and greatest duties of the Nation, and

WHEREAS, We believe that the effectiveness and usefulness of our existing agencies for this end would be much increased by the creation of a National Department of Health as proposed in Senate Bill No. 6049,

Resolved, That the American Medico-Psychological Association most strongly approves this bill and earnestly urges its passage.

Which resolution was duly seconded and adopted.

The following papers were read:

"Certain Disturbances of Thought," by J. M. Keniston, M. D., Middletown, Conn. (By title.)

"Progressive Myasthenia with the Pathology of the Spinal Cord in Old Age," by Arthur S. Hamilton, M. D., Minneapolis, Minn. (By title.)

"Meningitis: Notes In Its Relations to Infections Elsewhere and Its Histological Features," by Glanville Y. Rusk, M. D., New York, N. Y.

"The Importance of Complete Records of the Insane, and a Few Remarks, Concerning Chiefly the Preliminary Examinations," by W. W. Hawke, M. D., Philadelphia, Pa. (By title.)

DR. HILL—In behalf of the Committee on Resolutions, I beg leave to submit the following report:

Resolved, That at the close of this very successful meeting the thanks of this Association are due and hereby tendered to our retiring President for the impartial and efficient administration of his office.

To Dr. Woodward for the kind words of welcome to the Capitol city.

To Dr. Wm. A. White and his Committee of Arrangements for the excellent provision for our comfort and entertainment.

To the Program Committee for their success in providing an interesting variety of papers, and

To the Proprietors of this Hotel for their courtesy and care.

Respectfully submitted,

S. E. SMITH,
W. H. HATTIE,
J. J. KINDRED,
H. L. ORTH,
J. W. BABCOCK,
Committee.

On motion duly seconded the report of the committee was adopted.

THE PRESIDENT.—Fellow-members, we have about completed the program—a most excellent one. This has been, I believe, one of the busiest, most successful, and one of the most pleasant meetings our Association has ever held. You have all joined in efforts to make it so. In retiring from the high office of President I desire to thank you for the great honor you conferred upon me and the kindly consideration with which you have treated my shortcomings. My successor will now assume the presidential office, and will reflect great credit and honor upon the Asso-

ciation and himself. I shall appoint Drs. T. J. W. Burgess and Charles G. Hill a committee to escort the President-elect to the chair.

Now, ladies and gentlemen, it is my great pleasure to present to you your new President, Dr. Charles W. Pilgrim, of New York.

DR. PILGRIM.—*Mr. President, ladies and gentlemen:* I am appreciative of this great honor, for I feel that no greater honor can come to a worker in our specialty than the election to the presidency of this Association. In spite of the very kind and flattering words that Dr. Drewry has just said, no one can realize better than I do how difficult it would be to maintain the high standard which he has set. Nevertheless, I promise you that for the next twelve months I will have but one object in view, and that will be to make the Denver meeting as pleasant and profitable as this one has been.

I have named the following Program Committee: Dr. E. H. Howard, New York (Chairman); Dr. H. W. Mitchell, Maine; Dr. G. H. Moody, Texas; Dr. Elmer E. Stone, California, and Dr. W. M. English, Hamilton, Ontario.

DR. HILL.—In view of the fact that Denver, Col., the place selected for our next annual meeting, is a distant point and that by better organized arrangements we might secure better rates and better accommodations, I would move that the President appoint a Committee on Transportation for the next meeting.

Which motion was duly seconded and adopted.

DR. PILGRIM.—I would name as a Committee on Transportation: Dr. Charles G. Hill, Maryland; Dr. J. Percy Wade, Maryland; Dr. Henry W. Coe, Oregon, and Dr. F. W. Harmon, Ohio.

DR. PILGRIM.—There being no further business, I declare this meeting of the Association adjourned.

CHARLES G. WAGNER,
Secretary.

Notes and Comment.

THE AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION AND ITS JOURNAL.—At the annual meeting of the American Medico-Psychological Association in Philadelphia in 1894 authority was given the council to purchase the AMERICAN JOURNAL OF INSANITY, which had since July, 1844, been published at the State Hospital for the Insane at Utica, N. Y., and to arrange for the future publication and editorial management of the JOURNAL.

Since that meeting the JOURNAL has been the property and the official organ of the Association, and in its pages have regularly appeared the official report of the proceedings of the Association and a majority of the addresses and papers read at its meetings.

At the meeting of the Association in 1905 the council adopted a resolution to the effect that papers read before the Association were its property and could not be published elsewhere than in its annual volume of *Transactions* or its JOURNAL without permission of the council, and stipulating that credit be given the Association at the time of such publication.

The editorial board has frequently in its reports called attention to the fact that papers read before the Association and forwarded to the editors had been published in other medical periodicals not infrequently, it may be mentioned, without permission of the council, and in most instances without notice to the editors of such prior publication. It is not alone members of the Association who have been guilty in this respect, but gentlemen not members who have been invited by the program committees of various meetings have ignored not only the rule of the Association, the common practice of all organizations, but the written requests of the Secretary of the Association and of the editors of the JOURNAL.

We would, therefore, suggest that in the future the authors of all papers offered or solicited for our annual meetings be notified in advance of the reading of the paper that the paper when read becomes the property of the Association subject to the rule above mentioned, and that papers when read must be placed at once in

the hands of the Secretary in form for publication in the volume of *Transactions* and in the *JOURNAL* if accepted by the editors.

The editors of the *JOURNAL* desire to observe the ethics of journalism and maintain their proper relations with fellow members of the editorial fraternity. One of the most positive demands of editorial practice is that due and prompt credit be given to the source of original publication for any article or abstract which is republished. Moreover, editors have a certain pride in the matter of the original publication of scientific papers and communications, and certainly the official organ of a body like the American Medico-Psychological Association should be given the first opportunity to publish papers read at the meetings of the Association.

If papers read at the meetings of the Association are published elsewhere than in its *JOURNAL*, either with or without the consent of the council, and then sent in manuscript to the editors, who cannot be presumed to know always of the fact of prior publication, they may, as has been the case in one or two instances, unconsciously violate one of the cardinal principles of journalism, by omitting to give credit to the periodical in which the article they have accepted and published originally appeared.

There are other points concerning the papers and discussions at our annual meets which have been referred to in the report of the editorial board at the last annual meeting which we believe should receive serious attention at the next meeting of the Association.

MEETING OF THE BRITISH MEDICAL ASSOCIATION.—The seventy-eighth annual meeting of the British Medical Association was held in London, July 26-29, 1910, and was quite as successful as any hitherto held. The section of psychology and neurology held meetings on the last three days and it is this section which occupies our chief interest.

The first day was largely attended, great interest being shown in the address of the president, Dr. Theodore B. Hyslop, which dealt chiefly with the relation between brain and mind. Dr. Savage then opened a discussion on marriage and insanity, and was followed by Drs. Shuttleworth, Robert Jones, Risien Russell and many others, a resolution being adopted favoring the prohibition of marriage of those of unsound mind by the government.

The second day Dr. Risien Russell opened a discussion on tabes dorsalis, stating that beyond refutation syphilitic infection was the *fons et origo* of the disease, and then dealt chiefly with mercurial treatment. He was followed by Drs. Ferrier, Fiebes, Lieven of Aix-la-Chapelle, Judson Bury, Farquhar Buzzard, Gullan, and others, after which Dr. Russell closed the discussion.

On the last day the paper which excited most interest was that of Professor Barany, of Vienna, who described new and original methods of examining the relationship between the vestibular apparatus, the cerebellum, cerebrum and spinal cord. He was followed by Dr. G. Thomson, who read a paper on the need of a post-graduate curriculum and diploma in medicine, it being determined to carry the matter to the council. Three other papers were read of less general interest and the section closed.

ANNUAL MEETING OF FRENCH ALIENISTS.—The twentieth annual meeting of *Medicins aliénistes et neurologistes de France et des pays de langue française* was held at Belgium and Liege, August 1-8, 1910, there being two presidents, Drs. Crocq and Klippel. The afternoon of the first day Dr. Van Campenhout, professor in the School of Tropical Medicine of Brussels, gave an address on The Sleeping Sickness, and was followed by Dr. L'hermitte on The Sleeping Sickness and the Narcolepsies, which were followed by a discussion. In the evening a visit was made to the Brussels Exposition.

The second day was opened by an address on The Systematization of Cutaneous Lesions in Nervous Diseases, by Dr. Rose, who was followed by Dr. Sano, speaking on the same subject, after which there was a discussion and the congress adjourned to the Theatre Pathé, where there was a cineomatographic demonstration of various organisms in blood plasma, such as the trypanosome of sleeping sickness, the spirillum of recurrent fever and of syphilis, showing the process of cure, of agglutination, and of phagocytosis. The afternoon was given over to a general scientific session.

On the morning of the third day a visit was paid to Gheel, where luncheon was served and a meeting was held in the afternoon.

On the fourth day the meeting was held at the Institute of Physiology at Liege, the third address on Alcoholism and Crimin-

ality being given by Drs. Ley and Charpentier, which after discussion was followed by various papers. This ended the work of the congress, a reception being held that evening and the following morning an automobile trip was taken to several points. The next meeting place will be Tunis.

FESTSCHRIFT TO DR. CHARLES W. PAGE.—The Boston Medical and Surgical Journal for August 4, 1910, is an especially large number and contains seventeen papers by members of the staff of the Danvers State Hospital, the first, by Dr. E. E. Southard, being entitled Laboratory Work of the Danvers State Hospital, Hathorne, Mass., with Special Reference to the Policy Formulated by Dr. Charles Page, Superintendent, 1888-1898, 1903-1910. Other contributors are L. T. Alford, A. H. Peabody, A. S. Hamilton, A. A. Horner, M. M. Canavan, E. T. F. Richards, F. R. Sims, G. T. Brown, N. B. Burns and H. M. Adler. Dr. Page could ask no greater tribute to his "policy" than the publication of these papers in this form. Of his personal popularity, however, the staff of the Danvers State Hospital gave evidence by the presentation of a loving cup on the eve of his departure from the hospital, following the commencement exercises of the training school in June.

Obituary.

DR. DWIGHT R. BURRELL.

Dr. Dwight R. Burrell was born at Sheffield, Loraine County, Ohio, on March 1, 1843. He spent his boyhood on a farm and, after attending the common school, entered Oberlin College where he graduated in 1866, but during his college course served a short time in Company K, 150th Ohio Volunteers.

He received the degree of M. D. from Michigan University in 1868, and began practice as an assistant physician in the New York City Asylum for the Insane on Blackwell's Island. A year later he received an appointment as assistant physician at the Bloomingdale Asylum and remained there for several years. In 1876, he was appointed resident physician at Brigham Hall, Canandaigua, N. Y., and remained at this hospital until he was incapacitated by illness in 1908.

Dr. Burrell's professional life of forty years was devoted entirely to the treatment of the insane, and thirty-one years were spent at Brigham Hall.

He was a nephew of Dr. Amariah Brigham, of the Utica Asylum, in whose honor the hospital had been named twenty-one years before Dr. Burrell's appointment, and from the first he took a particularly personal interest in this hospital. Dr. Burrell's previous experience had well qualified him for the work at Brigham Hall, and his attractive personality, unfailing sense of humor and attention to details were valuable assets in his work. He did not spare himself in his medical and administrative work and spent much time in the clinical instruction of nurses from whom he then expected a high grade of work. Many changes in the care of the insane were made in the forty years of his professional life and he adapted himself to them. He gave much attention to the re-education and upbuilding of chronic cases as well as to the treatment of the acute forms of mental disease, and in the former line of work his attention to details often secured good results

and enabled many patients to return to their homes though they had not entirely recovered.

Dr. Burrell took great interest in the village of Canandaigua and was considered one of its most public spirited citizens, who could be depended on to aid in every progressive movement. He served as a village trustee and became the leader of the local Progressive Party before the majority of the citizens became convinced of the need of large expenditures for civic improvements, but he lived to see his policy adopted by the village.

Dr. Burrell was married on March 20, 1890, to Miss Clara Kent, of Kentland, Indiana. He was a member of St. John's Episcopal Church and for years a Senior Warden. He was president of the Board of Managers of the Clark Manor House, a home for aged people, from its incorporation until after he was incapacitated by illness, a manager of the Frederick Ferris Thompson Memorial Hospital, an active member of the Ontario County Historical Society, of the Canandaigua Scientific Association and an organizer and trustee of the Cemetery Association, which has developed an unusually beautiful village cemetery.

Dr. Burrell was a member of the Genesee Valley Club of Rochester, and of the Red Jacket Club of Canandaigua. He was a member of the American Medico-Psychological Association, of the American Medical Association, of the Medical Society of the State of New York, of the County Society and of the medical societies of Rochester and Canandaigua.

In January, 1908, Dr. Burrell had a stroke of apoplexy which made him an almost helpless invalid until death relieved him on June 18, 1910.

ROBERT G. COOK, M. D.

Half-Yearly Summary.

CALIFORNIA.—*Napa State Hospital, Napa.*—On October 1, the part of the new receiving and treatment building that has been set aside for female patients will be occupied. It will probably be sometime during the winter months before the wing set aside for male patients will be ready.

The laboratory, in charge of Dr. Ernest Dozier, is now in full working order, and it is expected to gather some very valuable statistics during the coming year.

The work of construction has been started on the detached female cottages. Plans for these buildings consist of a large center building to accommodate 200 female patients, as a living room and dining room. This building will be surrounded with 20 cottages for sleeping purposes.

In summing up the annual report, closing June, 1910, it is of interest to note the very large increase of native-born Californians who have been admitted to the hospital. Out of 230 born in the United States, 106 give their birthplace as California.

Recommendations to the board of managers for their presentation to the coming legislature are as follows: To provide for a consulting staff at this hospital to consist of an internist, surgeon, eye, ear, nose and throat, and skin specialists; an appropriation for the building of a large assembly hall, for the building of an ice and cold storage plant, and for the installation of new boilers.

—*Mendocino State Hospital, Talmage.*—There has just been completed a reinforced concrete cottage for male patients. It has been nicely furnished and is now being used. It will accommodate 70 patients. In it there is a complete plant for hydrotherapeutic treatment.

COLORADO.—*Colorado State Insane Asylum, Pueblo.*—Three new cottages have been completed at this institution at a cost of \$150,000. These will accommodate 300 patients, increasing the capacity to 1200.

CONNECTICUT.—The Rock Spring Farm at Mansfield has been purchased for the establishment of an epileptic colony.

The Connecticut Society of Mental Hygiene held its annual meeting in New Haven in April, at which Dr. George Blumer, of New Haven, was elected president, and Mr. Clifford W. Beers, secretary. Dr. Noble, of Middletown; Dr. Thompson, of Hartford; Dr. Pollock, of Norwich, and Dr. Knight, of Lakeville, were the physicians elected to the executive committee.

The Connecticut Society of Alienists held a meeting at the Hotel Stratfield, Bridgeport, March 29, 1910, at which Dr. Frank Hazelhurst Barnes, of Stamford, read a paper on Alcoholism and its Treatment, and there was a discussion on the shooting of a policeman by a lunatic-at-large.

The society was organized several years ago by a number of physicians prominent in psychopathic work "to promote the welfare of those afflicted with mental and nervous disease in this State. To encourage the discussion and promulgation of scientific principles, and the adoption and application of the most approved methods for the care and restoration of those nervously unbalanced whether in the incipient or advanced stages."

Dr. D. W. McFarland is president, and Dr. Almond D. Wadsworth, of South Norwalk, secretary. Among the active members are: Drs. H. M. Hitchcock, Edwin E. Smith, Chas. H. Jackson, Henry M. Pollock, Amos J. Givens, Frederick D. Ruland, John L. Buel, Edwin S. Vail, Wm. M. Thompson, and Henry S. Noble.

—*Connecticut Hospital for the Insane, Middletown.*—The new nurses' home at this hospital, for the accommodation of 100 nurses and attendants, is nearing completion. At the last session of the general assembly an appropriation of \$75,000 was made for this purpose, and the building will be finished within it. One wing will be occupied by the male, and the other by the female, nurses, while the central or intervening part of the building will be for the accommodation of married couples employed on the nursing force. The building is three stories in height, thoroughly fire-proof, heated by steam through direct radiation, and lighted by electricity. The bath and toilet rooms are provided with bath-tubs and rain-baths, and floored with tile throughout. The basement will be equipped as reading and recreation rooms for the nursing force, and will contain billiard tables, bowling alley, etc., while the reading room will be furnished with a library and a variety of current literature.

The coal pocket and apparatus for handling coal, partially destroyed through the spontaneous combustion of coal last October, has been rebuilt in concrete and iron.

A new 16-inch water-main, designed for better protection against fire, is nearly completed. All the water used by the institution is delivered by gravity under a head of 170 feet. The pressure for fire protection is further augmented by a large and powerful pump with a 12-inch suction. It was largely for the purpose of affording this pump a full supply of water that the new main was laid. A legislative appropriation of \$18,000 was granted for this improvement, and will be sufficient to complete the work.

DISTRICT OF COLUMBIA.—*Government Hospital for the Insane, Washington.*—The work of remodeling the electrical machinery at the power-house is going on. The contract for the first change in generators has been let, the machinery is on the grounds, and is now being installed.

A new rotary bake-oven has been purchased and excavations have been

begun for enlarging the bake-shop, which will be remodeled and a thoroughly modern bakery with a battery of two ovens, the old and the new, side by side, will be installed.

A method of cataloguing the cases has been worked out and recently put in operation. It catalogues all discharged patients on the basis of mental diagnosis, the clinical diagnosis other than mental, and the anatomical diagnosis in those cases in which an autopsy was held. A description of this method of cataloguing will appear in a short article in a subsequent issue of this JOURNAL.

The laws, regulations, court decisions, opinions of the attorney-general, etc., relating to the hospital and to the insane in the District of Columbia have been gotten together for the first time in the history of the hospital, and issued in pamphlet form.

The hospital training school graduated 16 nurses, 13 women and 3 men.

Bulletin No. 2, covering the work of the scientific department of the hospital for the year, has been issued, and contains the following articles: The Knee Jerk in Paresis, by Shepherd Ivory Franz, Ph. D.; Sensations Following Nerve Division, by Shepherd Ivory Franz, Ph. D.; Touch Sensations in Different Bodily segments, by Shepherd Ivory Franz, Ph. D.; Some Considerations of the Association Word Experiment, by Shepherd Ivory Franz, Ph. D.; Some Pathological Findings in the Neuroglia and in the Ganglion Cells of the Cortex in Senile Conditions, by Nicolás Achúcarro, M. D.; Elongated Cells, Stäbchenzellen, Neuroglia Cells, and Fat-granular Cells in the Ammon's Horn of the Rabbit, by Nicolás Achúcarro, M. D.; On Certain Lesions in the Form of Plaques in the Ependyma of the Lateral Ventricles, by Nicolás Achúcarro, M. D.; Connective Tissue "Plaque" on the Surface of the Dilated Fifth Ventricle, by Nicolás Achúcarro, M. D.; Remarks on the Comparative Diagnostic Value of the Noguchi Butyric Acid Reaction and Cytological Examination of the Cerebrospinal Fluid, by W. H. Hough, M. D.

ILLINOIS.—On January 1, 1910, the new board of administration, after a period of organization of several months, took charge of the 17 State institutions with their total population of 15,579. This board consists of ex-Lieutenant-Governor Lawrence G. Sherman, Dr. James L. Greene, formerly superintendent of Kankakee State Hospital; Frank D. Whipp, who is department and institution auditor; Benjamin R. Burroughs, an ex-circuit judge, and Thomas O'Conner, of Peoria. These have appointed Judge Burroughs as secretary, Col. Whipp as fiscal supervisor, Dr. Greene as alienist, E. H. Tuttle as chief clerk, Frederick Howard Wines as statistician, and C. Roy Hansen, C. J. Torch, and Miss Elizabeth M. Tunnell as clerks and stenographers. They have required that the fiscal supervisor, the superintendents, and the storekeepers be bonded, and have promulgated a number of general orders.

With the object of informing the people of the State of Illinois and of other States as to the working and results of the system of state control,

the board has established a periodical called the *Institution Quarterly*, the first number of which appeared May, 1910, under the editorship of Frederick Howard Wines. It is intended that this shall contain comparative studies of the administration of public charities elsewhere as well as note the current history of the Illinois institutions. In accordance with this principle the first number contains a paper on Hydrotherapy for the Insane, by Dr. Greene, and others on Pellagra, Blindness of the New-Born, The Rockefeller Foundation, The Indeterminate Sentence, the Parole, and the New Criminology, Adult Probation, American Institute of Criminology, The International Prison Congress, The National Conference of Charities, and a number of others of more local interest. The last page shows an organization chart.

The Society of Mental Hygiene was recently organized in Chicago and will carry out the same functions as the Connecticut society, namely after-care and prophylaxis. Dr. Voelav H. Podstata, formerly superintendent of Elgin State Hospital, has been placed in charge of the work, and is assisted by Miss Elnora Thompson, recently head nurse at one of the State hospitals, but now connected with Hull House. It is expected that with a system of after-care a number of patients now in the State hospitals may be paroled or discharged, and thereby relieve the crowded conditions of the hospitals.

—*Peoria State Hospital, Peoria.*—A fire which was caused by lightning partially destroyed the store building of this hospital early in the morning of April 4, 1910. There were 150 patients sleeping on the third floor of the building, but they were removed by the attendants without any casualty.

—*Jacksonville State Hospital, Jacksonville.*—About a year ago a new building for tubercular patients was completed and is now occupied. The building is small, having accommodations for but 24, 12 of each sex, but is sufficiently large to care for all patients suffering from this disease.

Two hospital wings have been added to the main building, one for male and one for female patients, each accommodating about 50 patients. The buildings are fully equipped with modern apparatus for hydrotherapeutic treatment and will be a great aid to the receiving service.

There is now under construction a building for employees which, when completed, will accommodate about 200. This will fill a long-felt want in providing suitable living quarters for employees away from the wards of the institution.

—*Kankakee State Hospital, Kankakee.*—A contract has been let by the board of administration for the construction of a new cottage for demented patients. The plan is new and unique in Illinois, and calls for a one-story building, equipped to meet all of the requirements for this particular class of patients. Mr. W. Carlys Zimmerman, of Chicago, State architect, is the designer.

The training schools for nurses in the State hospitals of Illinois have

been reorganized to conform to the requirements of the Illinois board for registration of nurses. A uniform curriculum for all of the schools has been adopted.

The 13 internes appointed July 1, 1910, by the Illinois State board of administration, for service in various State hospitals, spent the month of August at the Psychopathic Institute, this hospital, where daily lectures, clinics and demonstrations were given. Dr. H. Douglas Singer, director, conducted the clinics, and gave the lectures on psychological medicine. Dr. Chas. F. Read conducted the demonstrations on symptoms, case-taking, records, etc. Dr. Frank P. Norbury, superintendent, gave the lectures and demonstrations on treatment of mental disease. Dr. Wm. F. Lorenz had charge of laboratory demonstrations.

A medical society has been organized, the membership being limited to members of the medical staff of this hospital and the Psychopathic Institute. The officers are: Dr. Frank P. Norbury, president; Dr. Chas. F. Read, vice-president; Dr. Wm. F. Lorenz, secretary and treasurer. Meetings are held once a month. Original work among the members is encouraged, and the reports thus made will be given for publication to the medical journals. A contribution by Drs. Addison Bybee and Wm. F. Lorenz on "A Report of the Examination of Fifty Cases of Spinal Puncture; with Special Reference to Cell Count," will be published in the Archives of Internal Medicine.

Dr. H. Douglas Singer, director of the Psychopathic Institute, and Dr. Frank P. Norbury, superintendent, are members of the Lecture Bureau of the Illinois State Medical Society.

Dr. Frank P. Norbury, superintendent, was president of the Mississippi Valley Medical Association for the past year. His presidential address, delivered at the Detroit meeting, was on "The Teaching of Clinical Psychiatry; a Medical Educational Problem."

INDIANA.—*Northern Hospital for Insane, Logansport.*—The pathological building is nearing completion. It will contain a dispensary, autopsy theater, mortuary, dentist's office, chemical, microscopical and pathological laboratory, museum, library, etc. The cost of the building is \$15,000.

The capacity of the hospital has been increased to 1000.

—*Southeastern Insane Hospital, Madison.*—This institution was recently opened, 500 patients being transferred to it from the Central Indiana Hospital for the Insane, at Indianapolis. It consists of a group of 32 buildings which overlook the Ohio river and which were erected at a cost of \$1,500,000.

IOWA.—*Cherokee State Hospital, Cherokee.*—The new psychopathic hospital, which has been under construction during the past year, was opened for the reception of patients on August 30.

All buildings not considered lightning proof were equipped with substantial copper cables and points during the month of August.

A concrete tunnel from the main heating plant to the new fire station has recently been completed.

Concrete walks to and about the psychopathic hospital have been laid, and all grading about the building finished.

The old brick foundation for the greenhouse has been replaced with concrete construction.

All the old wooden feeding platforms connected with the piggeries have been replaced with substantial floors and walls made out of reinforced concrete.

—*Mt. Pleasant State Hospital, Mt. Pleasant.*—There has recently been constructed an infirmary for women at a cost of \$70,000, and a new and complete hydrotherapeutic department has been installed. A new cold storage plant, two new boilers and a large new dynamo have been placed in the engine-room. The Farmers Lodge has been completed and has been opened for the reception of about 120 patients. A thousand-acre farm and sixty acres of garden is being cultivated under improved and scientific methods of farming and gardening.

The parole system as employed in Iowa, giving patients a trial at home, has proven to be very beneficial. The inebriate department of this institution still admits quite a number of inebriates, and much good has been done for this class of patients. There have been very few readmissions, and there are representatives from that department in almost every part of Iowa. Many who were paroled as cured are still living up to the terms of their parole. The open-door system inaugurated in this institution some years ago has proven very beneficial to the patients, and there have been no more escapes than when all the doors were locked some years ago. The industries in the institution have proven very beneficial to the patients, as well as the physical culture work and the work in the fancy needlework department. All patients who are able mentally and physically to work are encouraged to follow some kind of employment or diversion, and all are kept busy.

The important feature of music, theatrical plays, socials, and other amusements and diversions have proven very beneficial to our patients.

KANSAS.—*Topeka State Hospital, Topeka.*—During the year, two cottages for women were completed and occupied, each cottage having a capacity for 60 beds. Also, room was provided for 150 additional male patients, enlarging the total capacity of the hospital to 1375 beds.

There is now being completed a tubercular pavilion for men. This building is of permanent construction and so arranged that each room in the building opens on a porch, to which the bed is easily accessible and where the patients can have the benefit of open-air treatment. With the completion of this building, all the tubercular patients will be amply provided with accommodations for special treatment.

The contract has just been let for the erection of a reception hospital for the treatment of acute cases. This will be equipped with all modern appliances and will be an important addition to the hospital.

—*State Hospital for Epileptics, Parsons.*—Two cottages for patients have been opened recently, one of these, formerly used as an office building, being occupied by the better-grade female patients.

The second cottage, which is new, is occupied by men who cannot be allowed full liberty. Some of these are apt to run away, and most of them are in fair mental condition, but subject to periods of excitement and irritability, when they are dangerous. The association of these men with demented and untidy patients has resulted in injury to both classes. The removal of thirty such men to a small building, with better surroundings, has done much towards making them better satisfied with their enforced stay in the institution.

About six thousand square feet of cement walk were laid during the summer, and more will be begun soon.

Several new cottages will soon be needed for the accommodation of the growing population.

KENTUCKY.—*Central Kentucky Asylum for the Insane, Lakeland.*—The last legislature appropriated \$50,000 for the construction of a water line from the Louisville Water Works Company which will greatly benefit the hospital and work upon which will soon be begun. Hitherto the water has been supplied from a number of lakes near the institution.

During the past three years mechanical restraint has been practically abolished.

The allowed per capita cost is but \$150, which is inadequate.

The institutions of the State are under the management of a bi-partisan board of control and are largely divorced from politics.

MAINE.—*Eastern Maine Insane Hospital, Bangor.*—An operating room has been completed and equipped in connection with the female wing opened last year and rooms for laboratory purposes have been partitioned off in the basement of the same wing. These are equipped for chemical, pathological and bacteriological work.

An assistant has been added to the staff, whose duties will be chiefly in this department.

It is expected that the new male wing now under construction will be ready for occupancy in January.

MARYLAND.—The recent legislature passed bills providing for State care of the insane and appropriating \$600,000 divided among the various State institutions for the purpose of increasing their accommodations and so provide for a number of patients who will be transferred from almshouses. This includes \$100,000 for the establishment of a separate hospital for the negro insane, the site for which has not been selected, but which, it is ex-

pected, will comprise a farm of about 600 acres, the object being to form an industrial colony which will be largely self-supporting. It is also intended that the construction of the buildings of it shall be of concrete.

The Maryland Psychiatric Society which was organized two years ago did much to aid the passage of the above bills and has recently formed an after-care committee which will serve the same functions as the societies of mental hygiene of Connecticut and Chicago. Physicians from the various hospitals for the insane will hold office hours in Baltimore to give advice to former patients, or those who fear a mental attack, and will with the aid of the various charitable organizations endeavor to provide discharged patients with homes and means of earning a living.

—*Phipps Psychiatric Clinic, Johns Hopkins Hospital, Baltimore.*—Plans for this building have been finally approved and the work of construction has begun. At present the foundations are being laid.

MASSACHUSETTS.—*Boston State Hospital, Boston.*—A general plan for the enlargement and development of this institution has been adopted by the trustees and approved by the State Board of Insanity. It provides for reception and custodial centers, for cottage groups for industrial patients, men and women, and a farmstead group. When completed, the hospital is expected to have accommodations for at least two thousand patients, providing for the needs of the Boston district. Contracts have been let and work is under way on an infirmary group for three hundred patients, an addition to the reception wards to provide hydrotherapeutic-treatment rooms, and a new laundry building.

Provision has been made for a pathological laboratory. Dr. Myrtelle M. Canavan, formerly of Danvers State Hospital laboratory staff, has been appointed pathologist, and has begun her service. An additional assistant physician for the clinical work is to be appointed immediately. Staff meetings have been inaugurated, and at present are held three times a week. The training school is to be extended this season to provide instruction for men as well as women.

In the matter of treatment, besides hydrotherapy particular attention is being paid to occupation and diversion of patients, more men than formerly being engaged on the grounds and in shops, while an industrial room for the women provides diversified industries, including basketry, mat making, fancy work, etc.

MISSISSIPPI.—*East Mississippi Insane Hospital, Meridian.*—A tubercular pavilion for the accommodation of 20 patients has just been opened. This building is an open one, and the sleeping department is a large open gallery, with well-ventilated sitting-room.

A complete hydrotherapeutic outfit is being installed in connection with the hospital that was erected two years ago.

A new cottage for the accommodation of 75 men will be completed and ready for occupancy by December.

NEW YORK.—The State controller recently issued a statement which showed that the largest item of expenditure by the State for the past ten years has been for the support of hospitals for the insane, this amounting to \$54,018,361. The president of the State lunacy commission, Dr. Albert Warren Ferris, it will be remembered, read a paper at the last meeting of the association, entitled, Possible Preventive Measures in Insanity, in which he urged that certain preventive measures should be inaugurated immediately in order that a great saving might result. The high cost of foodstuffs has led the commission to reduce the amount of hams and smoked meats one-half and to substitute for them beef, milk and eggs to provide an equivalent amount of nourishment.

The question of the care of the insane before commitment was the subject of a report of a committee of the Buffalo Academy of Medicine, which showed that there is need of considerable improvement, more than 37 per cent of the men and more than 10 per cent of the women who were committed to the Buffalo State Hospital having been sent from jails and police stations. In many instances there was a long delay and a lack of proper care.

The legislature, governor, and mayor of New York City have approved a bill establishing a board of inebriety who may establish a hospital and industrial colony for the care and treatment of inebriates. This board is to consist of seven members, two of whom shall be physicians. They are given authority to detain inebriates resident of New York City for a period of not less than two years, nor more than three years. The provisions of the law relating to insane persons applies to the commitment of inebriates as far as may be practicable. An inebriate may make his own application, or this may be made by a relative or friend and the inebriate committed upon the certificates of two examiners in lunacy and committed by a court of record. It is stated, however, that the board of estimate will not furnish money for this scheme as drunkenness has decreased quite markedly in recent years, and it is claimed that educational and social measures have done so much to accomplish this that the establishment of the hospital and colony is unnecessary.

—*Manhattan State Hospital, Ward's Island.*—Following is a list of improvements made since the issue of the last half-yearly summary:

\$4600 were allowed for painting certain wards and dining-rooms.

The interior of Camp Dent (the tuberculosis ward) was painted.

The windows throughout the East Building of the East Division were overhauled, repaired and replaced.

The roof over Ward 62 was repaired and the entire building provided with copper gutters and leaders.

The addition to the laundry is completed and the machinery is now being installed.

The old passenger dock has been removed and the present passenger dock repaired, and necessary dredging done at both the coal and passenger docks.

Three 50-gallon fire extinguishers have been obtained for the city dock, paint shop and laundry.

The shingle roof on the Amusement Hall has been replaced with zolium.

A new cement driveway has been made at the laundry.

A new 100-kw. engine has been installed at the power-house.

Work has been commenced on new hot water lines for Camp Dent, the bakery, female home, west male home and dining-room No. 8; Wards 17 to 20, Ward 59, Verplanck building, also on a new heating system for the greenhouse.

Tubes have been purchased for retubing boilers 1, 3 and 5, main building boiler house, and this work is now under way.

The work on contract for the four cottages is now well under way.

Contracts have been awarded for the construction of additional medical quarters; for steam main and feeder lines for new cottages; for construction of heating, plumbing and electric lighting of kitchen building for the four cottages now being built. These cottages will have a total capacity of 200 patients.

The work on the residence for additional medical quarters is now well under way, and the walls are nearly completed.

Material and labor have been allowed for the addition to bakery, work to be done under supervision of the hospital employees.

Material and labor, amounting to \$1500, have been allowed for painting the wards.

Material and labor, amounting to \$2000, have been allowed for cement walks and this work is now in progress.

Material and labor allowed, and work about to be commenced on renewals of leaders and gutters and replacing the roof on dairy barn.

An estimate of \$2500 has been allowed for new furniture.

An outbreak of diphtheria occurred in the hospital the latter part of June, which became very extensive in all parts of the institution and the most strenuous efforts were required to check it. Diphtheria antitoxin was used freely and with the co-operation of the department of health all patients and employees were immunized, and all cases that developed were promptly isolated. Altogether the hospital had about 70 cases. At present date of writing the epidemic seems to have been entirely checked with the exception of one woman patient who continues to give positive cultures. A culture is taken in every case of sore throat in order to promptly isolate any cases that show a positive development and to protect other inmates of the hospital. The first case that became manifest was developed in an employee, a woman cook, which proved fatal, and this was the only death caused by diphtheria alone.

—*Willard State Hospital, Willard.*—The census of patients August 31, 1910, was 2381—1158 men and 1223 women.

In the training school for nurses 16 members of the senior class passed the final examinations and graduated this year.

Dr. August Hoch, director of the Psychiatric Institute, visited at the hospital in August and devoted several days to the study of cases.

In the direction of new work, repairs and improvements, the concrete work on the main reservoir is the most important which has been accomplished during the present summer. This reservoir has been lined at the bottom and sides with a thick, solid covering of concrete to prevent leaking, and the stonework has been protected by a covering of concrete at the top. The greater part of this work was done by patients. The expense for materials, mostly for cement, was about \$2500. A new engine and dynamo have been added to the equipment in the electric light plant. This, with the two dynamos installed last year, gives a satisfactory reserve for lighting as well as electric power required in various places. The telephone system is to be renewed by the installation of a new switchboard, new wiring and other improvements where required. The wiring for electric lights in two buildings having become somewhat antiquated and inefficient is being replaced by new work. Considerable outside painting has been accomplished during the summer on the cornices, roofs and outside woodwork generally. A contract has recently been let for the construction of an additional water main from the main reservoir to the building known as Grand View, with a water-tower to be constructed near that building to afford efficient water pressure and fire protection.

An epidemic of typhoid fever developed among the hospital employees about August 1, with the appearance in quick succession of about 20 cases. Most of the cases were men employees and men patients from one department of the hospital, and the mode of development indicates that the contagion was introduced by some one located in that part of the hospital. From this source the infection was probably spread to some extent by flies. The disease developed in a very severe form in most cases, was accompanied by severe complications, and three deaths resulted—one patient and two men attendants. Since the outbreak of August only a few cases have occurred, and it is believed that the principal part of the epidemic is over.

Considerable work has been accomplished in the pathological laboratory; autopsies have been performed in cases where permission had been obtained; specimens of various tissues have been prepared and studied microscopically. Bacteriological examinations and chemical analyses have been made in a large number of cases.

—*Utica State Hospital, Utica.*—Adequate fire protection for the institution will be afforded by the pipes which are now being laid to connect with the city water supply. This is one of the needs of the institution for which an appropriation has been asked of the legislature for several years.

The erection of a new laundry building which has been under construction at this hospital since last spring is now complete. A contract for new machinery will be let in the course of a few weeks, and it is expected that the building will be in use before the issue of the next summary.

The increase in the population of the institution has necessitated the pro-

vision of additional dining-room space for men. This need has been met by the occupation of a room in the basement of the male wing formerly used as a recreation room.

Grading about the new reception building has been carried on actively during the spring and summer, and is now nearly all completed. The appearance of the grounds has been improved by the laying of cement walks, which has been carried on actively during the summer.

A water softening plant has been installed in connection with the hot water system.

The graduating exercises of the senior class of the training school were held Wednesday, June 29. The graduating class numbered nine, six women and three men.

—*Binghamton State Hospital, Binghamton.*—The new nurses' home, Ferris Hall, with accommodations for 150 employees of both sexes, has been occupied during the past six months and has provided much more desirable quarters for the nurses than previously existed at this institution. The building is attractive in design and handsomely furnished. A large reception room with a piano and a library are interesting features. It is expected that during the coming year a part of the building will be made available for a woman's club by the provision of suitable furnishings and other equipment.

A notable feature of the hospital life during the past summer has been the development of a summer camp for convalescent patients on the bank of the Susquehanna river about two miles distant from the main hospital. This camp is located on land owned by the hospital and consists of several small buildings in rustic design and a number of tents. It accommodates 30 patients and the employees necessary for their care. A daily wagon service conveys supplies to the camp and a telephone enables the nurse in charge to communicate at once with the medical office. Besides the patients regularly quartered at the camp, who remain as a rule a fortnight, daily visits are made by many who are not well enough to warrant their remaining continuously at the camp, and these outings have been found highly beneficial. Boating, fishing, bathing, croquet, etc., are enjoyed by some of these patients, while others have found the music of the graphophone or books in a small library entertaining. The camp life is regarded as a valuable part of the treatment of the recoverable patients.

The hospital fire department has been reorganized during the past summer and carefully prepared rules and regulations have been formulated and printed for the guidance of the employees. Systematic drilling of the department is being carried on with a view to prompt and efficient service in case of necessity.

Extensive alterations to the heating system have been in progress during the past year. New main steam lines have been installed, and a new heating system for the main building is nearly completed. It is expected that an entirely new electric equipment will replace the existing outfit in the near future.

A new residence has been erected for the farmer on an attractive site conveniently near the farm buildings, and the house formerly occupied by him has been entirely remodeled and equipped with steam heating apparatus as a place of residence for the second assistant physician. Apartments have also been provided for two physicians in the large building for the chronic insane known as Broadmoor, and a special hospital ward has been opened for patients in this building. The pathological laboratory has been enlarged and greatly improved by the reconstruction of the basement and its equipment for autopsy work. A much larger cooler has been provided in this basement and also additional shelving for museum specimens. A staircase where the cooler formerly existed connects the basement with the general laboratories on the floor above. Important special research work is being carried on in this department.

During the past two months a special course of instruction in massage has been given by Mrs. Lida Robinson who follows the methods made use of by Wier Mitchell. Nine of the nurses have taken this course of instruction with gratifying results.

Arrangements have been made for the installation of bowling alleys in the basement of the Assembly Hall. These alleys will be under the management of the Men's Club, an organization composed of employees of the hospital.

—*Hudson River State Hospital, Poughkeepsie.*—On October 1 the present steam railway passenger service to the hospital will be discontinued and a trolley service assumed by the local trolley company. The plans are for a 20-minute schedule direct to Main Street without change.

A few weeks will see the completing of the central heating plant. Conduits have been constructed from the boiler house leading to the north and south wings, reception hospital, central group, and Inwood, and it is planned to heat the whole hospital, aside from the cottage department, from this central station. The plans are for a battery of 16 boilers. Delays have been such that it has not been possible to make the electrical change from direct to alternating current, as has been anticipated. Appropriations have been made and work will be begun probably next spring.

Dr. Charles W. Pilgrim is abroad visiting European clinics.

—*Dannemora State Hospital for Insane Convicts, Dannemora.*—The new infirmary building at this hospital was opened September 1. It will accommodate 75 patients and includes a laboratory and autopsy room and a section for contagious diseases which can be completely isolated from the infirmary proper. This building is being occupied temporarily by the patients from Ward 1 of the old block which has been vacated for general repairs and alterations. This will result in better accommodations and more satisfactory service on Ward 1.

Work is progressing satisfactorily on the isolation and north traffic corridors. The completion of these corridors during the coming year will securely enclose a large airing court.

Funds have been provided for a shop building and warehouse, the excavation for which will be undertaken this fall.

The attorney-general has given an opinion that a patient in this hospital, whose term has expired, cannot be released on parole. If his condition is such that he is able to be at large, and he has relatives or friends who will maintain him, he may be discharged by the medical superintendent.

—*Long Island State Hospital, Brooklyn.*—The commission in lunacy has appropriated a sum of money for replacing the electric wiring and the plumbing in the main building. It is expected that tubs suitable for the administration of prolonged baths will be a feature of the new plumbing fixtures. Other improvements provided for are the replacing of the wooden stairways in the wings with fireproof structures. A number of steel ceilings will also be installed and improvements will be made in the heating and water equipments. The improvements are being planned with a view to a comprehensive renovation of the present buildings and further development of the hospital so as to render it more adequate for the needs of the insane of Brooklyn.

Considerable attention is being given to the use of attractive occupations and diversions as a means of treatment. One of the employees has recently been given the benefit of the course of special training which was provided for attendants on the insane by the New York School of Philanthropy.

—*Craig Colony for Epileptics, Sonyea.*—The census is 1350. During the summer an addition has been added to the laundry almost doubling its capacity. Considerable new equipment will be placed therein, including a 120-inch annihilator mangle, washers, extractors, etc., so as to permit carrying on the laundry work in a better manner than has been possible in the past. The two tubercular pavilions referred to in the last summary have been completed and are expected to be occupied about October 1. As soon as these are occupied, the census will probably approximate 1400 or slightly over. Some changes are to be made in the sewage disposal system at the suggestion of the State board of health, so that the present filter beds will work more satisfactorily than has been the case during the past few years. The last legislature made an appropriation of \$40,000 for the erection of a new dormitory to take the place of an old, four-story, Shaker structure, known as the Six Nations.

—*Letchworth Village, Thiells.*—The governor signed the bill appropriating \$179,000 to begin the construction of this new State institution for the care of epileptics and imbeciles, the entire amount of which will be available October 1.

—*Mohansic State Hospital.*—A bill has been passed and signed authorizing the State lunacy commission to complete this hospital at a cost of \$2,000,000, and an appropriation of \$100,000 is made for a preliminary survey.

NORTH DAKOTA.—*State Hospital for the Insane of North Dakota, Jamestown.*—A new ward building for 100 men and 15 employees was completed and occupied in April. This building has ceramic tile floors in all bath, toilet, clothes rooms and corridors, high marble wainscoting in all bath and toilet rooms and lavatories, metal window and door cases and metal-covered doors, and is practically fire-proof. The lighting and ventilation are good, and it is believed that this is the best public building in North Dakota.

A tuberculosis hospital designed to furnish accommodations for 40 women is under construction and will probably be completed before the close of the year. This building is of brick, stone and concrete, two stories in height, well lighted and ventilated and provided with large open porches.

A new approach to the grounds has been partially graded and about 300 yards of cement walk built.

OHIO.—*Massillon State Hospital, Massillon.*—A farm consisting of 123 acres, and adjoining the hospital grounds, has been recently purchased. The farm house, after being remodeled, is used as a residence by the steward. The purchase of this farm now brings the total acreage up to 850 acres.

A new dairy barn takes the place of the one destroyed by fire some months ago. This barn has accommodations for 160 cows, and is equipped with all the necessary appliances of a modern dairy.

No other new buildings have been constructed during the past year.

There has been no change in the medical staff.

—*Columbus State Hospital, Columbus.*—There have been no new buildings constructed during the past year, but the four attic wards of the hospital are now in the course of remodeling, two of them already being completed, making them the best lighted and best ventilated wards of the institution, whereas heretofore they have been much the worst in this respect.

There are now in the course of construction, airing courts and sun porches, which will be enclosed in glass with fire-proof stairways, running from top to bottom, four stories in height, that will furnish additional fire escape for the main building of the institution, each ward having an exit upon these porches. They will be heated and lighted, and part of them utilized for tubercular wards both summer and winter, so that it will probably be unnecessary to continue the tent colony for tubercular patients.

All of the exit doors from the institution have been re-hung to swing outwards, so as to give better exit in case of fire or panic.

A night medical service has been established, and a night physician appointed.

In the way of amusements, a basket ball court has been built, and the old laundry rooms converted into recreation hall, 40 by 75 feet in dimension, in which have been installed bowling alleys, pool and billiard tables, and also tables for cards, checkers, chess, etc. This will also furnish a lounge-

ing and smoking room for the privileged patients during the cold weather.

New cement walks have been laid from the exit of every ward, and so connecting with other cement walks, so that the patients can go out in all sorts of weather on cement walks a mile in length, without getting muddy.

One new well has been drilled 311 feet in depth, and another will soon be under way, to add to the water supply of the institution.

A new battery of boilers of 350 horsepower is also being installed.

OREGON.—*Oregon State Insane Asylum, Salem*.—A central heating plant has been completed and is in operation. It supplies heat to every part of the institution including the dairy, livery, greenhouses, etc.

There is under construction a receiving hospital in which will be a surgical amphitheatre, which will be used for the lectures of the training school, and a modern hydrotherapeutic department.

A resident pathologist has also been appointed and an up-to-date pathological and bacteriological laboratory equipped.

PENNSYLVANIA.—The mayor of Philadelphia has recently sent the city councils a message asking for the appropriation of \$150,000 for the purchase of 120 acres of woodland as a site for the erection of a home for feeble-minded children. The land is on the Delaware river, immediately north of the Torresdale filtration plant.

—*Dixmont Hospital for the Insane, Dixmont*.—This hospital, like the others of this State, is greatly overcrowded. A recent census showed a population of 997. The hospital was planned to accommodate but 500.

—*State Hospital for the Insane, Norristown*.—A female nurse was sent to the Chicago School of Civics and Philanthropy this summer, and since her return she has been engaged in teaching various handicrafts to patients and nurses.

A new laundry building is being built, which is to be one story high and constructed of hollow tile and cement. It will be very large and roomy and equipped with the most modern apparatus, including a large steam sterilizer for mattresses, etc.

A strictly modern and sanitary cow-barn, which will accommodate over 200 cows, is being constructed. It is built mainly of cement and will be practically fire-proof.

Dr. W. W. Richardson, chief physician, was granted three months' leave of absence by the board of trustees and will sail September 21 to attend the International Congress on the Care of Insane at Berlin, and will later study in Munich and Zurich.

RHODE ISLAND.—*Butler Hospital, Providence*.—On the evening of April 9, 1910, two barns, with their contents, belonging to this hospital, were destroyed by fire. One of the buildings was a cow barn and contained 28 cows and a bull, besides 40 tons of hay, all of which were destroyed. The

other building was a wagon shed, and in it were stored carts, wagons, a harvester, a spreader, hay tedder, and other tools and implements for use on the farm. Both buildings were 2½-story frame structures and burned like tinder. The loss amounted to about \$20,000. The fire is supposed to have originated from electric light wires. Considerable excitement was created in Providence by the report that the hospital itself was burning.

A new power plant and industrial building was built at this hospital last year. The building consists of a boiler house, engine room, work shop and laundry. The boiler room is equipped with four 78-inch horizontal, tubular boilers, rated at 875 horsepower and equipped with feed-water heater, soot cleaners, damper regulators, etc. The engine room contains one 35 K. W. 250-volt direct current generator and turbine, with sufficient space to install two or more large machines. Current is now generated for power and light for the shops only. The industrial building is of two floors. The conformation of the ground is such that both floors are at grade. The first floor is used as a shop for the carpenter, engineer, etc., and contains a machine shop and other accessories necessary for repair work. The paint shop is located at one end and is separated from the other room by a fire-proof partition. A lavatory is provided for the use of the mechanics, containing shower bath, bath tub, lockers, etc. On the second floor is located the laundry. The building has been made of fire-proof construction all through and the general design is in keeping with the hospital proper. This power plant is situated some 300 feet from the main buildings and is connected therewith by a tunnel, seven feet square, for carrying pipes and as a passageway.

Work is now in progress in remodeling buildings and spaces which were vacated by the laundry and boiler room. A kitchen is being constructed in the old boiler room with the floor on a grade with the basements. This is a half-story building with a high roof and carefully ventilated. The building previously used as a laundry is being converted into a dormitory for men. In the old kitchen building will be placed a diet kitchen, dining-room for employees, sewing and linen rooms, and dormitories for women.

SOUTH DAKOTA.—*Asylum for Insane Indians, Canton.*—The new steam laundry was completed during November, 1909, and is turning out a very satisfactory class of work. At the present moment, the matter of the construction of an up-to-date hospital, with operating-room, mortuary-room and complete hydrotherapeutic apparatus, at an estimated cost of \$50,000 is under advisement. In addition, it has been recommended that a superintendent's cottage be erected at a cost of \$5000 to \$6000. The position of physician and assistant superintendent continues vacant, owing to the lack of proper quarters.

TENNESSEE.—*Eastern Hospital for Insane, Bearden.*—There is now being erected an addition to the women's department which will increase the capacity 100. It is expected to be ready for occupancy in January, 1911. The cost when completed and furnished will be \$45,000.

TEXAS.—*State Lunatic Asylum, Austin*.—There has recently been completed two cottages for tuberculous patients which are now occupied. There are also under construction additions for the accommodation of patients which will cost \$30,000, and also a new laundry which will cost, when equipped, \$15,000.

—*Southwestern Insane Asylum, San Antonio*.—A new wing was opened recently providing accommodation for 300 more patients.

VIRGINIA.—*State Epileptic Colony, Lynchburg*.—Three buildings now on the farm will be utilized, one as a cottage for patients, one as an administration building, and the third for farm employees. Plans for a new building have been accepted, and it is expected that the building will be ready for occupancy at the end of the year.

—*Southwestern State Hospital, Marion*.—At the meeting of the legislature of 1910 a bill was passed providing a separate department for the care and treatment of the criminal insane in Virginia. This institution was selected as the one to take these patients, and appropriation was made for a building to accommodate the same. There is now under construction this building which is 174 by 42 feet, two stories high. It will probably be completed by June, 1911, and ready for the reception of patients.

ONTARIO, CANADA.—*Hospital for the Insane, Penetanguishene*.—Everything was new and the necessary utilities were more or less absent at this hospital. The grounds presented no sign of an attempt to beautify the naturally very beautiful situation. Having cleared up the grounds as well as possible the government was asked for the services of a landscape gardener to make a plan for laying out and planting the grounds properly. This they have generously given, and to begin with there is in front a beautiful lawn of about two acres in extent. Then the grounds at the back of the buildings have been graded and sown to lawn grass, and are looking very well.

The cow stables were old and in a very unsanitary condition, so there has been built a very fine stable with every modern improvement. It is 76 feet long, fitted inside with two rows of stalls so that the cattle face each other on each side of a central gangway, along which a truck on a track carries the food which is distributed on either side into cement mangers.

A large stone root house 30 by 40 feet, built in a hillside and covered with a cement cover, holds the roots at one end of the track, and a cement mixing-room at the other, beside the silo, is where the ensilage is mixed and loaded on the truck for feeding. Each pair of cows have a single drinking basin. All the material about the stalls is either iron or cement and the place is lighted by electricity. A cleaning-up room is supplied with hot and cold water, and there the linen aprons and sleeves are kept for the

use of the milkers. The milk is taken from here in sterilized milk cans to the dairy, a room finished in cement in the cold storage building, it is weighed, strained, cooled and set away in the cold storage room for the milk and butter. The dairy and cans are then sterilized with live steam after each milking to be ready for the next.

Last year there was built a new pig pen adjoining the old one, 45 by 30 feet. This was badly needed. It is also finished in cement inside and has cement feeding troughs, with a furnace and cooking kettles installed there.

Last year there was also built a very modern brick slaughter house equipped with every necessary modern convenience.

An up-to-date power house has also been built, where electricity is manufactured and where there is a powerful pump for pumping water from the bay when needed.

There is just now building a large cold storage building for all the purposes of a place of this kind. This also will be very modern in its structure and appliances.

There are only 367 patients now, but the government is endeavoring to provide for their comfort and welfare equal to any on the continent.

In this population of 367 patients there are 100 cases of well-marked enlargement of the thyroid gland or goitre. This seems an unusual proportion, and one is almost forced to the conclusion that this condition has something more to do with the causation of insanity than is generally credited to it.

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Abstracts and Extracts.

Dioxydiamidoarsenobenzol, or "606"; Ehrlich's Newest Remedy for Syphilis. By SAMUEL J. MELTZER, M. D. New York Medical Journal, Vol. XCII, p. 371, Aug. 20, 1910.

There is a brief statement of the work of Ehrlich which preceded his discovery of the specific action of "606." In the past five years the discovery of the protozoon of syphilis by Schaudinn, and the succeeding improvements in technique which have rendered its observation less difficult; the transmission of syphilis to monkeys by Roux and Metchnikoff; and the discovery of the Wasserman reaction, are all steps which have prepared us for this new discovery with its "stunning" results. Wechselmann reports that he "saw on Saturday a patient with a dirty, coated *Erosinschanker* and about twenty rose spots on the body. I gave him an injection (of '606') at 3.30 p. m. At 7.30 p. m. nearly all the roseola had disappeared, and on Sunday morning the chancre was clean and nearly without induration."

The discovery of this substance by Ehrlich is the outgrowth of his very first contribution in which he demonstrated the specific affinities of various leucocytic granules to various types of stains, but is directly derived from his work of twenty years ago when he studied the affinity of methylene blue for the malarial organism, after which he devoted his studies to serum therapeutics until six or seven years ago, when the treatment of sleeping sickness became a practical problem and the trypanosomes being a protozoon which was easier to handle than the malarial, he again turned his attention to the study of protozoon diseases, and turning first to the action of stains, discovered "trypan red" as a specific for trypanosomes. Later he turned his attention to arsenical preparations, especially to atoxyl, and soon discovered the fact that the correct constitution admits of a variety of substitutions, some of which reduced the toxicity of the substance for the animal without abolishing its effectiveness upon the invading protozoa. Arsacetin was developed, but was unsatisfactory. Then arsenophylglycin which was not ideal as it produced some irritation of the kidneys. This was number 408 and after continued experimentation the present 606 was developed which is still under investigation, it only being supplied to a limited number of careful observers who have hospital facilities for the careful observation of details.

The only unpleasant complication is the causation of pain which sets in late and lasts many days, but which seems to have only occurred when the injection was given intramuscularly in the gluteal region, and not when it was given intravenously.

Some have found the Wasserman reaction disappear in 100 per cent of the cases, others in 40 per cent and less, but all agree that the change in the reaction occurred much later than the disappearance of the syphilitic manifestations.

Whether the cure will prove permanent yet remains to be seen, although a large number of patients have remained cured for many months and in only small fraction of cases has there been relapses, due apparently to the administration of too small a dose.

Professor Alt has studied the effect of "606" upon cases of locomotor ataxia, paralysis, and epilepsy which were known to be of syphilitic origin with gratifying results.

W. R. D.

The Treatment of Syphilis with Ehrlich's Dioxydiamidoarsenobenzol. By WILHELM WECHSELMANN, M. D. New York Medical Journal, Vol. XCII, p. 449, Sept. 3, 1910.

The author's experiments began in March of the present year and he soon determined that, in some cases, a cure was possible in syphilitic infants so saturated with spirochætæ that they were sure to die, and that postmortem examinations of such infants showed no evidence of any effect of the arsenic upon the internal organs. On account of the great distrust felt against arsenic preparations it was necessary to prove the superiority of this preparation and it was tried on two incurable cases. The results being so favorable, it was then tried on more than 600 cases of syphilis. The erosive chancres become clean after from 12 to 24 hours and heal rapidly; in pronounced sclerosis the cleaning process is of the same rapidity, but absorption takes longer. Mucous patches of the mouth heal in from 24 to 48 hours, even if the patient is an inveterate smoker. The roseola disappears in a few days as do also the malign ulcerous syphilides, the rupia, the watery papules, the small papulous syphilides which are otherwise so pertinacious, and the gummata. Slower is the disappearance of the large papulous syphilides, and for these a second injection becomes sometimes necessary. Very favorable are the effects on syphilis of the bones, especially the night pains of the bones disappear as by magic. Visceral lues also shows a quick recovery. The bad effect of certain aromatic arsenical preparations upon the optic nerves are not found with the use of this one.

In progressive paralysis no clear results have as yet been obtained. In tabes a quick improvement has been noted, but we must not forget that there exists in paresis, and especially in tabes, processes which cannot be repaired, such as sclerosis of certain systems.

The Wasserman reaction disappears in from 8 to 40 days. Widespread recurrences such as occur after mercurial treatment have not been seen, there only having been a breaking out of the disease in single localities which probably could not have been reached by the first injection of the remedy, the capillaries having been occluded by endarteritis.

As to technique, Iverson and Schreiber prefer the intravenous administration, which, carefully carried out, is painless, but is followed by a chill, vomiting and fever. Wechselmann therefore prefers the subcutaneous administration according to the following method devised by Lange and himself: Dioxydiamidoarsenobenzol is dissolved by triturating in a mortar in from 1 to 2 cc. of a soda solution, when, by adding acetic acid in drops a fine yellow paste is precipitated. This precipitate is then made sterile and dissolved in from 1 to 2 cc. of distilled water, and neutralized by the addition of 0.1 normal soda solution or 1 per cent acetic acid according to a very carefully ascertained reaction with litmus paper. The absence of pain depends upon the exactness of this neutralization. The deposit is centrifugalized and the paste which has been deposited at the bottom of the glass is shaken up with a physiological sodium chloride solution. This mixture is drawn into the syringe and slowly injected subcutaneously below the shoulder blade in a place which has been made aseptic and treated with tincture of iodine. The injection does not produce a sensation of pain, but a few hours later there will occur a nervous pain of varying but not excessive degree. On the third or fourth day there will appear a reactive swelling of a varying degree, sometimes with reddening. The temperature rises but little if at all and pus has never been seen.

W. R. D.

Contribution à l'étude du syndrome confusionnel considéré comme premier stade de la démence précoce. Evolution de ces états sur un terrain diathésique particulier. Essai de traitement. Par le DR. JACQUES HAMEL. Journal de Neurologie, An. 15, p. 21, 20 janvier, 1910.

The author first refers to the difficulty of finding a classification satisfactory to all, this being introductory to the question of the entity of dementia præcox. He claims that this difficulty of finding entirely fitting pigeon holes for each case shows the importance of considering the individual rather than the disease, and quotes Sir Dyce Duckworth's statement that we may recognize at least four special dispositions of the human body: the arthritic, the scrofulous or lymphatic, the nervous, and the bilious. Examples are given to show that in diabetic families there is also insanity, epilepsy, hysteria, tabes, paresis, and even exophthalmic goitre. That gout, rheumatism, asthma, gravel, obesity, and biliary lithiasis are all expressions of the arthritic diathesis. The idea is not a new one but has been forgotten.

Klippel has spoken of the paralytic dementias. Remond and Voivenel have described the paretic syndrome. Vallon has said that there is not a dementia præcox, but the precocious dementias follow mental confusion, hebephrenia, catatonia, etc. This point is further elaborated, a number of other authors being quoted to show that the time is not far off when we shall speak of dementia præcox as a syndrome. The author has sought to prove that this syndrome, when it originates with an attack of confusion, is accompanied by a physiological disorder which may be ameliorated.

With this idea he has treated seven cases of dementia præcox who were also suffering from pulmonary tuberculosis with the recalcification method of Ferrier with the result that there has been a marked mental as well as physical improvement. This treatment consists in the administration of the following three times daily:

Calcium carbonate	0.50
Calcium phosphate	0.20
Magnesia, calcined	0.05

The question of auto-intoxication is discussed and the constituency of the urine, it being claimed that there is a marked increase in the elimination of chlorides, which shows the demineralization of the organism and thus affords a favorable ground for the development of infection. Report of a case which was given superalimentation and in whom there was no improvement is given for comparison.

W. R. D.

The Psychology of the Consumptive. By MAURICE FISHBERG, M. D. Medical Record, Vol. 77, p. 654, April 16, 1910.

The author first speaks of the improvement in the condition of consumptives which has been observed to follow a change of physicians, even though no change has been made in the form of treatment, and says that this fact and others indicates that in tuberculosis, an organic disease *par excellence*, the psychic state of the patient plays a great rôle in the symptomatology as well as in the treatment. Very few writers on tuberculosis have taken into consideration the mental or psychic state of the patient, though many mention the importance of perfect discipline and the influence exerted by the physician. The large number of consumptive insane in asylums has drawn the attention of physicians to the relation of the nervous system to tuberculosis, and an excessive number of insane die from this cause. It is also well known that the number of consumptives who display symptoms of neurasthenia, psychasthenia, and hysteria in their various manifestations is very great, but of greater interest is the psychic state, the *état d'âme*, of the average consumptive who is not insane. In the great majority of tuberculosis victims of either sex, at the onset of the disease, often before the physical conditions can be discerned, there is a remarkable change in their mental traits and character, a disturbance in their emotional life, and a striking divergence from their previous habits, customs, affections and tastes. The first striking change noted by the writer has been selfishness, and he gives numerous examples. A number of authors are quoted on the psychology of the consumptive; Engel, who believes that the original, innate temperament of the individual becomes strikingly pronounced; Saxe, who thinks the keynote of the mental changes of the consumptive is the gradual loss of will-power, of self-control, which unmasks the patient. Judgment is weak and defective, as is shown by the well-known optimism with which the patients deceive themselves about their real condition, and which is evident from the onset of the disease.

The influence of the tuberculous toxemia is discussed. The psychic factor has much to do with the improvement which often follows a new form of treatment. An excellent bibliography is appended to the article.

W. R. D.

Apropos of Catatonic States in the Degenerates. By R. KUTNER. Allgemeine Zeitschrift für Psychiatrie und Psychisch-Gerichtliche Medizin, Vol. 67, May 24, 1910.

Kutner reports three cases of catatonia in degenerates. All his patients were markedly degenerated criminals. During their confinement, and soon after the sentence was passed, they became mentally afflicted. The first patient was perfectly well until his incarceration, and the others developed well-defined mental symptoms before imprisonment. It is worthy of note that in all the three patients psychic disturbances were not observed during short confinement. However, mental aberration became manifest when they were threatened with the deprivation of their liberty for a long period of time. The onset was usually sudden; in one only simple irritability; in the second a short period of confusion preceded; in the third for three weeks a peculiar state, in which absurd utterances interchanged with orderly behavior, was observed. But in this case like in the others the catatonic complex became fully developed. Sæmiologically it could hardly be differentiated from akineto-parakinetic picture of true catatonia; akinesia, mutism, negativism, stereotype, perseveration, etc., were demonstrable. Only corea flexibilitas was not observed, but this phenomenon in true catatonia is rare. The patients were tube-fed, and suffered with incontinence of urine and feces. The variation of body weight was inconstant; in one case reduction and in the other increase of body weight during the acute phase were noted. The symptoms showed greater intensity and constancy than one sees in ordinary cases of catatonia, especially the whole picture had a course of exaggerated monotony—in none of his cases frequent occurrence of intercurrent hyperkinetic or relatively free phases were noticed. It was rather striking that in both cases facial expression was not constrained and the patients were rather drowsy, as if in deep hypnosis. It is interesting to note that with their removal to a hospital for the insane marked subsidence of symptoms were observed. With the disappearance of the acute catatonic manifestations patients retained their characteristic constitutional traits—reduction of affect, morally feeble-minded degenerates with mild or markedly well-defined nervous symptoms. During further observation evidences of deterioration were not elicited. However, the catatonic symptom-complex recurred.

The author discusses the differential diagnosis; general paralysis is excluded by reason of absence of physical signs and other symptoms characteristic to this disease; hysteria is eliminated because no hysterogenic stigmata and constitution were manifest; from dementia-præcox it is differentiated by the following points: the development of the symptom-complex on basis of degeneracy, presence of other psychic stigmata, monot-

onous course, sudden onset in relation to the infliction of the penalty—particularly of long imprisonment, the exaggerated intensity of certain symptoms, drowsy appearance of the face, and absence of deterioration. Simulation may be thought of, but it was utterly impossible for these patients, under constant observation, to imitate such a form of psychosis without betrayal. Only subconscious concepts in presence of a high degree of narrowing of the field of consciousness are able to produce an auto-hypnosis or allied states, and determine such constant mass of energy in one direction. By the constant transition of fully conscious psychic life to semi- or sub-conscious psychic progress in a single symptomatic picture is impossible, and a sharp line of demarcation is difficult to draw between fully conscious and more or less subconscious reactions.

MORRIS J. KARPAS.

The Treatment of General Paralysis through the Aid of Injection of Nucleic Acid. By PROF. DR. JULIUS DONATH.

Mikulicz employed nucleic acid in certain surgical conditions (infections) in order to bring about a leucocytosis, and this theory was supported by his experiment on animals. Likewise Stern used nucleic acid together with the usual mercurial treatment in syphilis and obtained a definite leucocytosis, which he ascribed to the former.

Nucleic acid is the splitting up product of the cell nucleus, a complicated nucleus proteid, which, on treating with alkaline, produces further cell decomposition—nucleus and albumen. He obtained it from yeast. He employs the following formula:

R. Natrii Nucleici.

Natrii chlorate, ou..... 2.0

Solve in Aqu. dest. ster..... 100.0

S. G. for one or two injections.

Through a chemical irritation, the nucleic acid causes a local and later a general hyperleucocytosis and elevation of temperature. A blood count should be made daily until the norm is reached—3 or 5 days is usually the case. The temperature should be taken every two hours (from 6 a. m. to 10 p. m.). As a rule the temperature returns to its normal state within 3 or 5 days. Those cases, which develop abscess formation, leucocytosis and hyperthermia may last for 14 days. As a rule high temperature and increase of leucocytes are related to each other.

He treated 21 cases of paresis with nucleic acid and his results may be tabulated as follows:

Results of nucleic acid treatment.	Number of cases.	Cases with lues or chancre anamnesis.	Cases with previous history of Hg. treatment.
Essential improvement (ability to work and support themselves)	10 = 47.6%	4	3
Unimproved	5 = 23.8%	2	2
Improved	6 = 28.6%	5	2
Total	21	11	7

Of these 21 cases, 10 showed definite improvement, by which the author understands that the patient is able to return to work and support himself. In five cases some improvement was noticed, only subjectively and not objectively—the patients could be cared for outside of a hospital, but were unable to do any work. Six cases were unimproved. Of the 15 cases 6 had chancre and 5 were subjected to mercurial treatment. It is interesting to note that under this treatment tremors, irritability, memory, calculation, disarthria and fainting spells considerably improved.

The object of this pyretic treatment is to bring about hyperthermia and hyperleucocytosis, and through increased oxidation metabolic by-products in paresis are destroyed. The author feels that we cannot speak of recoveries but rather of marked remissions in paresis, and recommends most strongly the use of nucleic acid. The treatment is applied to all cases of paresis with or without a history of syphilis. He does not hold with Margain that paresis is of two kinds—one due to syphilis and the other to auto-intoxication. At present such a differentiation is impossible.

MORRIS J. KARPAS.

Appointments, Resignations, Etc.

- ACHUCARRO, DR. NICHOLAS, Histopathologist at Government Hospital for the Insane at Washington, D. C., resigned May 10, 1910, to return to Spain and resume his duties as physician in the provincial hospital at Madrid.
- ANDREWS, DR. B. F., Junior Assistant Physician at Craig Colony for Epileptics at Sonyea, N. Y., promoted to be Third Assistant Physician, May 1, 1910.
- ARMES, DR. GEORGE W., appointed Superintendent of Institute for Feeble-Minded at Frankfort, Ky.
- BALDWIN, DR. L. B., Superintendent of State Hospital for the Insane of North Dakota, resigned to be Superintendent of Elliott Memorial Hospital of the University of Minnesota.
- BANKS, DR. F. L., Assistant Physician at Central State Hospital at Petersburg, Va., resigned.
- BAERNES, DR. FRANCES M. JR., Assistant Physician and Director of the Clinical Laboratory at Sheppard and Enoch Pratt Hospital at Towson, Md., appointed Medical Interne at Government Hospital for the Insane at Washington, D. C., June 16, 1910.
- BARTLETT, DR. CLARENCE SAMUEL, from 1894 to 1906 Assistant Physician at New Hampshire State Hospital at Concord, died at his home in Gardner, Mass., aged 41.
- BARTRAM, DR. NELL G., appointed Woman Physician at King's Park State Hospital at King's Park, L. I.
- BISHOP, DR. LESLIE C., Assistant Physician at Danvers State Hospital at Hathorne, Mass., appointed Assistant Physician at Dr. Stedman's Hospital, Bournewood, at Brookline, Mass.
- BOEHM, DR. GUSTAV F., appointed Clinical Assistant at Manhattan State Hospital at Ward's Island, N. Y., June 11, 1910.
- BOERNER, DR. MORRIS, Assistant Physician at Hospital for the Insane at Austin, Texas, resigned.
- BOWERS, DR. PAUL E., Medical Interne at Government Hospital for the Insane at Washington, D. C., promoted to be Junior Assistant Physician, March 1, 1910.
- BROWN, DR. AMASA M., appointed Junior Physician at St. Lawrence State Hospital at Ogdensburg, N. Y.
- BROWN, DR. JOHN R., Assistant Physician at Eastern Hospital for the Insane at Bearden, Tenn., resigned.
- BRAITHWAITE, DR. WILLIAM W., Medical Interne at Government Hospital for the Insane at Washington, D. C., resigned May 16, 1910, to accept a position elsewhere.
- BUCKLEY, DR. CORNELIUS J., appointed Medical Interne at Manhattan State Hospital at Ward's Island, N. Y., July 7, 1910, and resigned Aug. 3, 1910.
- BUSSE, DR. EDWARD P., appointed Superintendent of the new Southeastern State Hospital at Madison, Ind.
- CAMDEN, DR. THOMAS BLAND, formerly Superintendent of West Virginia Hospital for the Insane at Weston, died at his home in Parkersburg, W. Va., from cerebral hemorrhage, aged 80.
- CANAVAN, DR. M. N., Assistant Pathologist at Danvers State Hospital at Hathorne, Mass., appointed Pathologist at Boston State Hospital at Boston, Mass.
- CARLETON, DR. B. L., appointed Assistant Physician at Central State Hospital at Petersburg, Va.
- CHALMERS, DR. HARRIET E., appointed Assistant Physician at Eastern Maine Insane Hospital at Bangor.

- CLIFT, DR. FREDERICK, Assistant Physician at Utah State Mental Hospital at Provo, appointed to a similar position in the Kaysville Hospital.
- CLOGHER, DR. RALPH E., appointed Medical Intern at Utica State Hospital at Utica, N. Y., July 9, 1910.
- COHN, DR. EUGEN, Assistant Superintendent of Anna State Hospital at Anna, Ill., appointed Assistant Superintendent at Peoria State Hospital at Peoria, Ill.
- CONNEFPE, DR. J. F., Night Physician at Columbus State Hospital at Columbus, O., died of typhus fever contracted in Mexico while studying an epidemic there.
- CORNELL, DR. WILLIAM BURGESS, Assistant Physician at Sheppard and Enoch Pratt Hospital at Towson, Md., appointed Assistant Physician at Danvers State Hospital at Hathorne, Mass., July 15, 1910.
- CROOKS, DR. WILLIAM A., Assistant Superintendent of Watertown State Hospital at Watertown, Ill., promoted to be Superintendent, March 21, 1910.
- CROUCH, DR. E. L., Assistant Physician at Jacksonville State Hospital at Jacksonville, Ill., resigned.
- CUSHMAN, DR. R. A., Assistant Physician at Mendocino State Hospital at Talmage, Cal., resigned June 30, 1909.
- DAVIS, DR., Second Assistant Physician at Eastern State Hospital at Williamsburg, Va., promoted to be First Assistant Physician.
- DISHONG, DR. G. W., appointed Assistant Physician at Watertown State Hospital at Watertown, Ill., July 1, 1910.
- DOLLEAR, DR. A. H., Assistant Physician at Watertown State Hospital at Watertown, Ill., promoted to be Physician.
- DONOHUE, DR. GEORGE, Assistant Physician at Independence State Hospital at Independence, Iowa, appointed Superintendent of State Hospital for Inebriates at Knoxville, Iowa.
- DORAN, DR. ROBERT E., First Assistant Physician at Willard State Hospital at Willard, N. Y., appointed Medical Inspector for the State Lunacy Commission.
- DUNN, DR. JOSEPH, appointed Assistant Physician at Philadelphia General Hospital at Philadelphia, Pa.
- EARL, DR. H. D., Third Assistant Physician at Cherokee State Hospital at Cherokee, Iowa, promoted to be Second Assistant Physician.
- ECHOLS, DR. GEORGE L., Medical Intern at Government Hospital for the Insane at Washington, D. C., resigned April 23, 1910, to accept a position at Georgia State Sanitarium at Milledgeville.
- EHLERS, DR. E. A., Assistant Physician at State Hospital for the Insane at Norristown, Pa., resigned Aug. 1, 1910.
- ERICKSON, DR. ELMER, Medical Intern at Elgin State Hospital at Elgin, Ill., promoted to be Assistant Physician.
- FARNELL, DR. FREDERIC J., Junior Physician at Manhattan State Hospital at Ward's Island, N. Y., promoted to be Assistant Physician Aug. 1, 1910.
- FERNALD, DR. WALTER, Superintendent of Massachusetts School for Feeble-Minded at Waverly, appointed a member of a State commission to investigate the increase of criminals, mental defectives, epileptics, and degenerates.
- FLOOD, DR. EVERETT, Superintendent of Massachusetts Hospital for Epileptics at Palmer, appointed a member of a State commission to investigate the increase of criminals, mental defectives, epileptics, and degenerates.
- FOLEY, DR. EDWARD A., Assistant Physician at Kankakee State Hospital at Kankakee, Ill., appointed Assistant Superintendent at Anna State Hospital at Anna, Ill.
- FOLSOM, DR. RALPH P., Junior Physician at Manhattan State Hospital at Ward's Island, N. Y., promoted to be Assistant Physician, June 1, 1910.
- FOSTER, DR. THOMAS R., Assistant Physician at Elgin State Hospital at Elgin, Ill., appointed First Assistant Physician at Watertown State Hospital at Watertown, Ill.
- FREMEL, DR. ISAAC F., Medical Intern at Elgin State Hospital at Elgin, Ill., promoted to be Assistant Physician.
- GARDNER, DR. W. E., First Assistant Physician at Central Kentucky Asylum for the Insane at Lakeland, promoted to be Superintendent, Aug. 1, 1910.

- GARVIN, DR. WM. C., Assistant Physician at Manhattan State Hospital at Ward's Island, N. Y., promoted to be Second Assistant Physician, Aug. 1, 1910.
- GINSBURG, DR. SAMUEL, appointed Medical Intern at Craig Colony for Epileptics at Sonyea, N. Y., May 1, 1910.
- GLEUCK, DR. BERNARD, Medical Intern at Government Hospital for the Insane at Washington, D. C., promoted to be Junior Assistant Physician, May 1, 1910.
- GUTH, DR. MORRIS S., Superintendent of State Hospital for the Insane at Warren, Pa., dismissed by the trustees.
- HAILE, DR. ENOCH C., Assistant Physician at State Hospital No. 3, at Nevada, Mo., resigned.
- HARRIS, DR. ISHAM G., First Assistant Physician at Hudson River State Hospital at Poughkeepsie, N. Y., appointed Superintendent of the new Mohansic State Hospital at Yorktown, N. Y.
- HARRISON, DR. ALECK P., Assistant Physician and Pathologist at Springfield State Hospital at Sykesville, Md., resigned.
- HARRISON, DR. JOHN P., appointed Medical Intern at Buffalo State Hospital at Buffalo, N. Y., September 5, 1910.
- HATCHER, DR. GEORGE E., appointed Assistant Superintendent of Central Hospital for the Insane at Nashville, Tenn.
- HAVILAND, DR. C. FLOYD, Second Assistant Physician at Manhattan State Hospital at Ward's Island, N. Y., resigned April 25, 1910.
- HAVILAND, DR. EVERAL C., First Assistant Physician at Brattleboro Retreat at Brattleboro, Vt., resigned.
- HAWKE, DR. W. W., Chief Resident Physician at Insane Department of Philadelphia General Hospital, appointed Superintendent of State Hospital for the Insane at Warren, Pa.
- HAWLEY, DR. MAX C., appointed Assistant Physician at Watertown State Hospital at Watertown, Ill., July 1, 1910.
- HAYDEN, DR. CLARA M., Woman Physician at Clarinda State Hospital at Clarinda, Iowa, appointed Woman Physician at one of the Minnesota State Hospitals.
- HEALEY, DR. DANIEL J., Superintendent of Institute for the Feeble-Minded at Frankfort, Ky., resigned.
- HENDERSON, DR. E. H., appointed First Assistant Physician at Southwestern State Hospital at Marion, Va.
- HILLS, DR. FREDERICK L., Superintendent of Rutland State Sanitarium at Rutland, Mass., appointed Superintendent of Eastern Maine Insane Hospital at Bangor.
- HINTON, DR. RALPH T., First Assistant Physician at Jacksonville State Hospital at Jacksonville, Ill., promoted to be Assistant Superintendent.
- HOVEY, DR. WALTON, Junior Assistant Physician at Hudson River State Hospital at Poughkeepsie, N. Y., resigned September 1, 1910, to enter private practice.
- HUGHES, DR. OLIVER, Medical Intern at Elgin State Hospital at Elgin, Ill., promoted to be Assistant Physician.
- JACKSON, DR. J. ALLEN, Assistant Physician at Central Indiana Hospital for the Insane at Indianapolis, appointed Chief Resident Physician at Insane Department of Philadelphia General Hospital.
- JENKS, DR. FRANK H., Acting Superintendent of Elgin State Hospital at Elgin, Ill., resigned to take charge of Rockford Sanitarium.
- JOHNSON, DR. NORMAN A., appointed Assistant Physician at State Hospital for the Insane at Howard, R. I.
- KELLY, DR. ISAAC N., appointed Medical Intern at Government Hospital for the Insane at Washington, D. C., July 1, 1910.
- KENNEDY, DR. R. FOSTER, formerly Resident House Officer of National Hospital for the Paralyzed and Epileptic at London, England, appointed Chief of Clinic at New York Neurological Institute.
- KIER, DR. RAYMOND F. C., Assistant Physician at Matteawan State Hospital at Matteawan, N. Y., appointed First Assistant Physician at Dannemora State Hospital at Dannemora, N. Y.

- LAFORA, DR. GONZOLA R., appointed Histopathologist at Government Hospital for the Insane at Washington, D. C., May 11, 1910.
- LENNON, DR. FRANCIS J., Medical Interne at Manhattan State Hospital at Ward's Island, N. Y., resigned July 17, 1910.
- LEONARD, DR. EDWARD, Medical Interne at Philadelphia General Hospital at Philadelphia, Pa., promoted to be Assistant Physician.
- LOCKHART, DR. WILSON, formerly Superintendent of Eastern Washington Hospital for Insane at Medical Lake, died in his office in Seattle, April 28, 1910, from cerebral hemorrhage.
- LOGIS, DR. BENJAMIN R., Senior Assistant Physician at Government Hospital for the Insane at Washington, D. C., resigned March 15, 1910, to enter private practice.
- LOGUE, DR. L. C., appointed Assistant Physician at Hospital for the Insane at Austin, Texas.
- LONG, DR. T. L., Second Assistant Physician at Cherokee State Hospital at Cherokee, Iowa, promoted to be First Assistant Physician.
- MCALLASTER, DR. B. R., First Assistant at Cherokee State Hospital at Cherokee, Iowa, appointed Superintendent of North Dakota Hospital for the Insane at Jamestown.
- MCUEEN, DR. BERNARD, appointed Assistant Physician at Asylum for Indigent Insane at Chattahoochee, Fla.
- MACDONALD, DR. ROBERT S., First Assistant Physician at Dannemora State Hospital at Dannemora, N. Y., resigned to enter private practice at Plattsburgh, N. Y.
- MALONEY, DR. J. A., appointed Assistant Physician at State Hospital for the Insane at Norristown, Pa.
- MARVIN, DR. G. D., formerly at Agnews State Hospital at Agnews, Cal., appointed Assistant Physician at Mendocino State Hospital at Talmage, Cal.
- MERRITT, DR. W. M., appointed First Assistant Physician at State Insane Hospital at Asylum, Miss.
- MILLER, DR. HENRY, Clinical Director at Government Hospital for the Insane at Washington, D. C., appointed Superintendent of Maine Insane Hospital at Augusta, May 31, 1910.
- MILLS, DR. ALVAH V., appointed Assistant Physician at State Hospital for the Insane at Howard, R. I.
- MILTIMORE, DR. EDWARD, Assistant Physician at Manhattan State Hospital at Ward's Island, N. Y., resigned August 1, 1910.
- MINER, DR. F. B., Assistant Physician at Oak Grove Hospital at Flint, Mich., resigned to enter private practice.
- MINER, DR. HERBERT S., Superintendent of State Hospital for Inebriates at Knoxville, Iowa, resigned.
- MITCHELL, DR. THOMAS J., Superintendent of State Insane Hospital at Asylum, Miss., resigned to enter private practice in Jackson, Miss.
- MOENCH, DR. GERHARD L., appointed Clinical Assistant at Manhattan State Hospital at Ward's Island, N. Y., July 5, 1910, and promoted to be Medical Interne, August 1, 1910.
- MONTGOMERY, DR. WILLIAM H., Assistant Physician at Willard State Hospital at Willard, N. Y., promoted to be Second Assistant Physician at Kings Park State Hospital at Kings Park, N. Y., May 12, 1910.
- MULLIGAN, DR. L. L., Superintendent of Central Kentucky Asylum for the Insane at Lakeland, resigned August 1, 1910.
- MUNCH, DR. FREDERICK E., appointed Assistant Physician at Jacksonville State Hospital at Jacksonville, Ill.
- MUNSON, DR., appointed Assistant Physician at Southern Indiana State Hospital at Evansville.
- NEFF, DR. MARY L., Medical Interne at Long Island State Hospital at Brooklyn, N. Y., resigned July 1, 1910.
- OSBORN, DR. WILLIAM S., Assistant Superintendent of Colorado State Insane Asylum at Pueblo, appointed Chief of the Wisconsin State Receiving Hospital for Insane at Mendota.

- PARKER, DR. H. REA, First Assistant Physician at Eastern State Hospital at Williamsburg, Va., resigned.
- PARMENTER, DR. JOHN A., appointed Assistant Physician at Nebraska State Hospital, Ingleside, Neb.
- PAXTON, DR. ROY A., appointed Medical Interne at Buffalo State Hospital at Buffalo, N. Y., June 9, 1910.
- PETTIRONE, DR. R. S., appointed Medical Interne at Craig Colony for Epileptics at Sonyea, N. Y.
- PETTITJOHN, DR. ABRA C., appointed Superintendent of State Hospital for the Insane No. 2, at St. Joseph, Missouri.
- PETIT, DR. LOUIS C., Second Assistant Physician at Manhattan State Hospital at Ward's Island, N. Y., died June 2, 1910, from arteriosclerosis, aged 52.
- PINCO, DR. LOUIS H., appointed Junior Assistant Physician at Craig Colony for Epileptics at Sonyea, N. Y., May 10, 1910.
- POATE, DR. ERNEST M., appointed Junior Physician at Manhattan State Hospital at Ward's Island, N. Y., April 17, 1910.
- PODSTAT, DR. VACLAV H., Superintendent of Elgin State Hospital at Elgin, Ill., resigned May 1, 1910.
- PRICE, DR. R. R., appointed Assistant Physician at State Hospital No. 3, at Nevada, Missouri.
- PRIDDY, DR. ALBERT S., formerly Superintendent of Southwestern State Hospital at Marion, Va., appointed Superintendent of State Epileptic Colony at Lynchburg, Va.
- PRITCHARD, DR. J. ALBERT, Assistant Physician at Kings Park State Hospital at Kings Park, N. Y., transferred to Willard State Hospital at Willard, N. Y., June 11, 1910.
- RANDOLPH, DR. JAMES H., formerly Chief Physician at State Hospital for Indigent Insane at Chattahoochee, Fla., appointed Visiting Physician to the same.
- READ, DR. CHARLES F., appointed Physician to Psychopathic Ward of the Illinois Psychopathic Institute.
- REDMOND, DR. FRANKLIN H., Assistant Physician at Osawatomic State Hospital at Osawatomic, Kansas, resigned.
- RICHARDS, CAPTAIN ROBERT L., who was detailed by the Army for the study of psychiatric problems as related to questions of military organizations at Government Hospital for the Insane at Washington, D. C., left the hospital the latter part of July, 1910, for duty elsewhere.
- RICKSHER, DR. CHARLES, formerly Assistant Physician at Danvers State Hospital at Hathorne, Mass., appointed Chief of Clinic at New York Neurological Institute.
- ROGERS, DR. OSBORNE R., appointed Assistant Physician at Eastern Hospital for the Insane at Bearden, Tenn.
- ROTNE, DR., appointed Medical Interne at Department for Women of State Hospital for the Insane at Norristown, Pa.
- RUSK, DR. GLANVILLE Y., Autopsy Physician at Pathological Institute of New York State Hospitals at Ward's Island, N. Y., appointed Assistant Professor of Pathology at University of California at Berkeley.
- RUSSELL, DR. WILLIAM L., Medical Inspector for the New York State Commission in Lunacy, appointed Superintendent of Long Island State Hospital at Brooklyn, N. Y., June 1, 1910.
- RUTTER, DR. HEMLEY C., formerly Superintendent of Columbus State Hospital at Columbus, Ohio, committed suicide by poison September 17, 1910, as a relief from "an incurable disease which had caused him endless torture," aged 61.
- ST. CLAIR, DR. PAUL M., formerly Assistant Physician at Central Indiana Hospital for the Insane at Indianapolis, died in Philadelphia, Pa., May 12, 1910, from meningitis, aged 27.
- SANBORN, DR. BIGELOW T., for 27 years Superintendent of Maine Insane Hospital at Augusta, and for 17 years prior to that time first Assistant Physician at the same, died at his home April 18, 1910, from cerebral hemorrhage, aged 70.

- SCHUMAN, DR. MICHAEL, appointed Medical Interne at Manhattan State Hospital at Ward's Island, N. Y., September 27, 1910.
- SCRIBNER, DR. ERNEST V., Superintendent of Worcester Insane Asylum at Worcester, Mass., appointed a member of a State commission to investigate the increase of criminals, mental defectives, epileptics, and degenerates.
- SESSIONS, DR. S. KENOSHA, Assistant Physician at Southern Indiana State Hospital at Evansville, dismissed.
- SHEA, DR. JAMES J., Junior Physician at Manhattan State Hospital at Ward's Island, N. Y., resigned, August 1, 1910.
- SIGHTS, DR. HENRY P., appointed Superintendent of Western Hospital for the Insane at Hopkinsville, Tenn.
- SMITH, CAPTAIN L. L., of West Point, has been assigned by the Army to the Government Hospital for the Insane at Washington, D. C., for the study of psychiatric problems as related to question of military organization.
- SOLOMON, DR. MEYER, Medical Interne at Government Hospital for the Insane at Washington, D. C., promoted to be Junior Assistant Physician March 1, 1910.
- STEPHENSON, DR. J. W., First Assistant Physician at Southwestern State Hospital at Marion, Va., resigned January 1, 1910.
- STERN, DR. SAMUEL, Assistant Physician at Philadelphia General Hospital at Philadelphia, Pa., resigned.
- STEWART, DR. NOLAN, appointed Superintendent of State Insane Hospital at Asylum, Miss.
- STONE, DR. WILLIAM GLEASON, from 1883 to 1893 Assistant Superintendent of Illinois Northern Hospital for the Insane at Elgin, died at his home in Montclair, N. J., November 14, 1909, from tuberculosis, aged 52.
- STRICKLER, DR. EDWARD J., Medical Interne at Manhattan State Hospital at Ward's Island, N. Y., resigned June 1, 1910.
- TAYLOR, DR. WARREN E., Superintendent of Watertown State Hospital at Watertown, Ill., resigned March 21, 1910.
- THOMAS, DR. LEE W., appointed Junior Physician at Central Islip State Hospital at Central Islip, N. Y.
- THOMPSON, DR. HERBERT E., appointed Assistant Physician at Eastern Maine Insane Hospital at Bangor.
- THOMPSON, DR. WARREN W., appointed Assistant Physician at Nebraska State Hospital at Ingleside, Neb.
- THORNE, DR. JOHN H., appointed Medical Interne at Government Hospital for the Insane at Washington, D. C., July 11, 1910.
- TICHENOR, DR. WILLIAM A., formerly Superintendent of State Hospital No. 3, at Fulton, Mo., was found dead in a hotel in Chicago, April 8, 1910, from heart disease and narcotic poisoning, aged 52.
- TOMLINSON, DR. HARRY A., Superintendent of St. Peter State Hospital at St. Peter, Minn., appointed Superintendent of State Farm for Inebriates near Wilmar, Minn.
- TRADER, DR. WILLIAM N., Third Assistant Physician at Craig Colony for Epileptics at Sonyea, N. Y., promoted to be Second Assistant Physician, May 1, 1910.
- TREADWAY, DR. WALTER L., appointed First Assistant Physician at Jacksonville State Hospital at Jacksonville, Ill.
- TRENKLE, DR. HENRY L., Medical Interne at St. Lawrence State Hospital at Ogdensburg, N. Y., appointed Assistant Physician at Oak Grove Hospital at Flint, Mich.
- VOSBURGH, DR. STEPHEN E., formerly Medical Interne at Kings Park State Hospital at Kings Park, N. Y., appointed Assistant Physician at Boston State Hospital at Boston, Mass., April 1, 1910.
- WASHBURN, DR. F. L., appointed Pharmacist and Pathologist at Northern Hospital for the Insane at Logansport, Ind.
- WATKINS, DR. JOHN A., appointed Assistant Physician at Western Kentucky Asylum for the Insane at Hopkinsville.
- WEAVER, DR. RAYMOND G., appointed Medical Interne at Binghamton State Hospital at Binghamton, N. Y., July 1, 1910.

- WEISBREWNER, DR. RICHARD, appointed Medical Interne at Kankakee State Hospital at Kankakee, Ill.
- WEN GLESKY, DR. JULIUS F., Assistant Superintendent Kankakee State Hospital at Kankakee, Ill., resigned to accept a position on the staff of the Sacred Heart Sanitarium at Milwaukee, Ill.
- WIEDRICH, DR. E. W., Junior Physician at Binghamton State Hospital at Binghamton, N. Y., resigned September 30, 1910, to enter private practice in Ontario, N. Y.
- WILGUS, DR. SIDNEY D., Chairman of New York Board of Alienists, resigned, and appointed Superintendent of Elgin State Hospital at Elgin, Ill., May 1, 1910.
- WILSON, DR. JOHN T., formerly Superintendent of Hospital for the Insane at Austin, Texas, and of North Texas Hospital for the Insane at Terrell, died in Washington, D. C., May 22, 1910, aged 64.
- WINSLOW, DR. PAUL V., Medical Interne at Hudson River State Hospital at Poughkeepsie, N. Y., resigned September 1, 1910, to enter private practice in Newburgh, N. Y.
- WINTERODE, DR. ROBERT, P., Assistant Physician at Maryland Hospital for the Insane at Catonsville, Md., appointed Superintendent of the new hospital for negro insane of Maryland.
- WOOD, DR. ORLANDO SCOTT, formerly Assistant Physician at Athens State Hospital at Athens, O., died in Mt. Carmel Hospital at Columbus, O., March 14, 1910, from septicæmia due to an operation wound, aged 46.
- YERETZ, DR. H. K., appointed Night Physician at Columbus State Hospital at Columbus, Ohio.